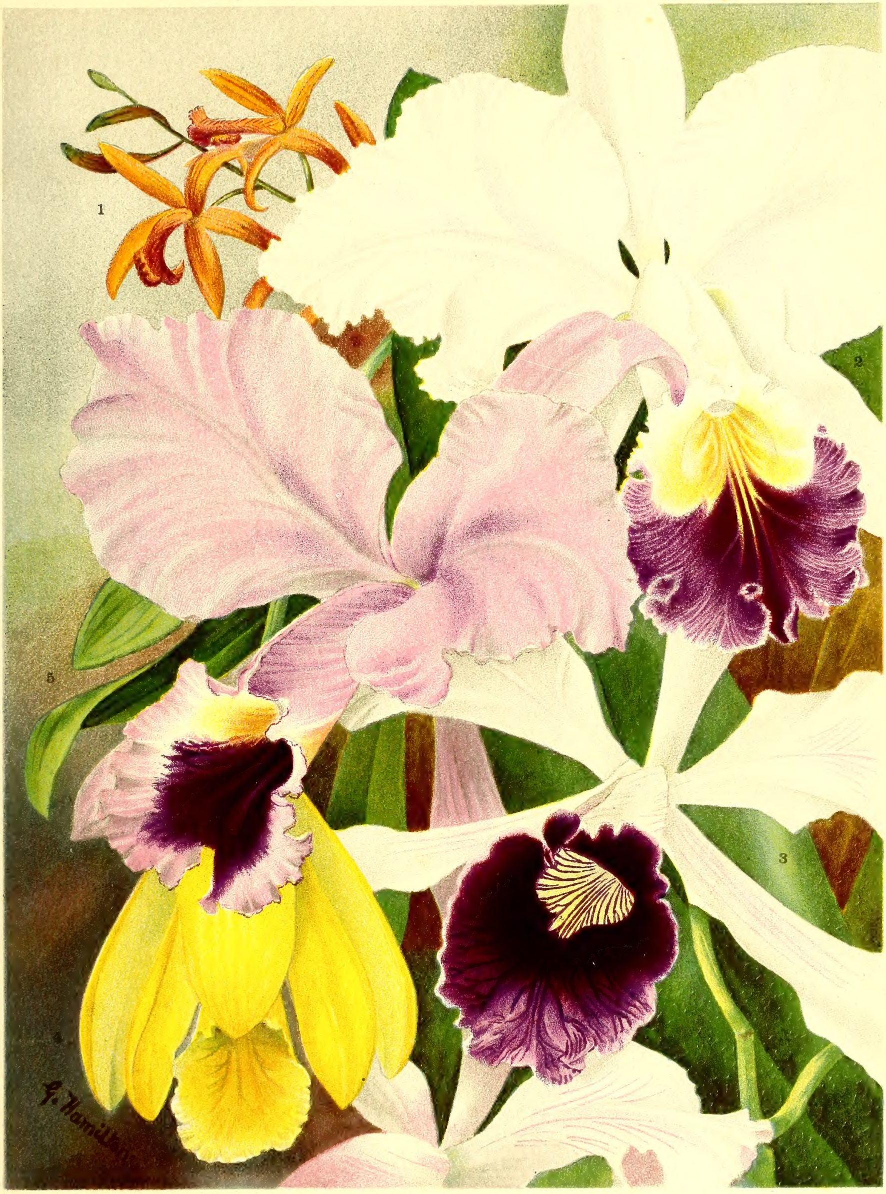
THE FLOWER GROWER'S GUIDE

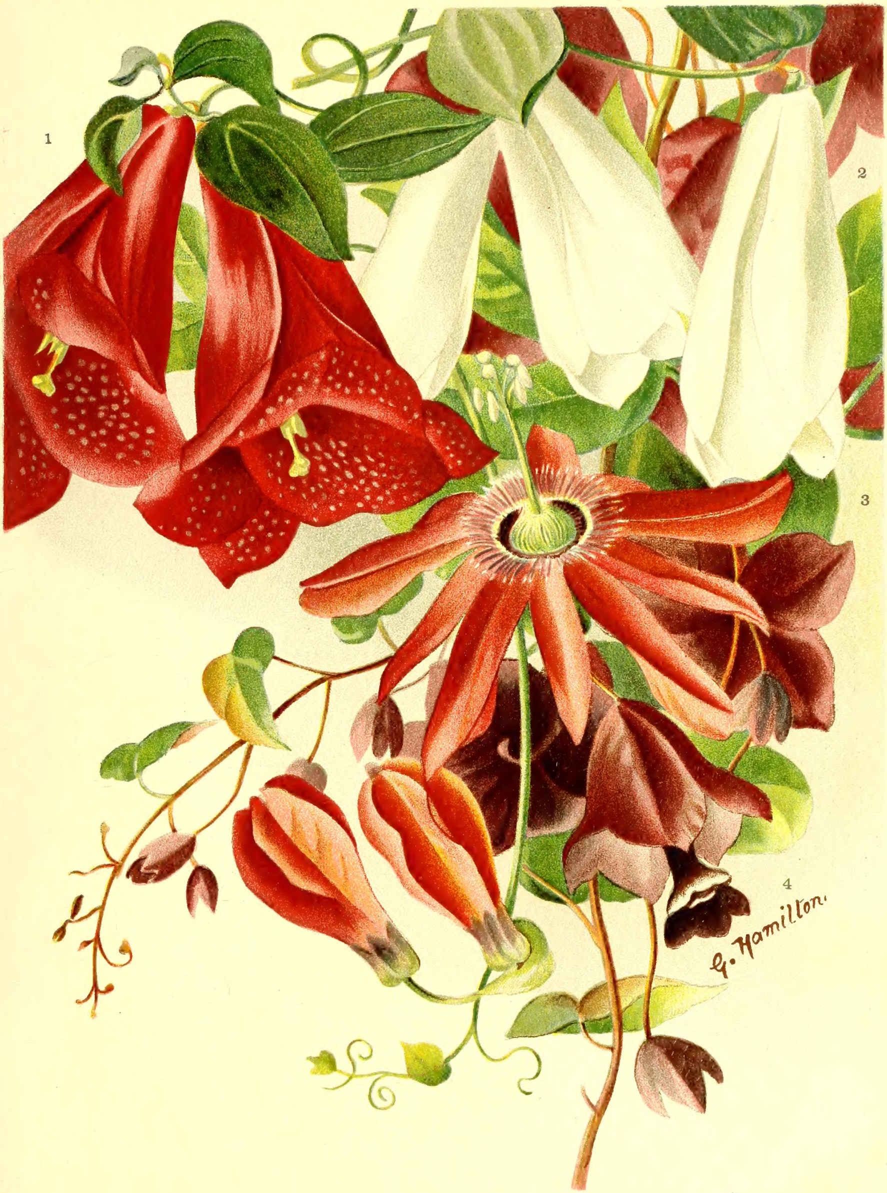
By

JOHN WRIGHT



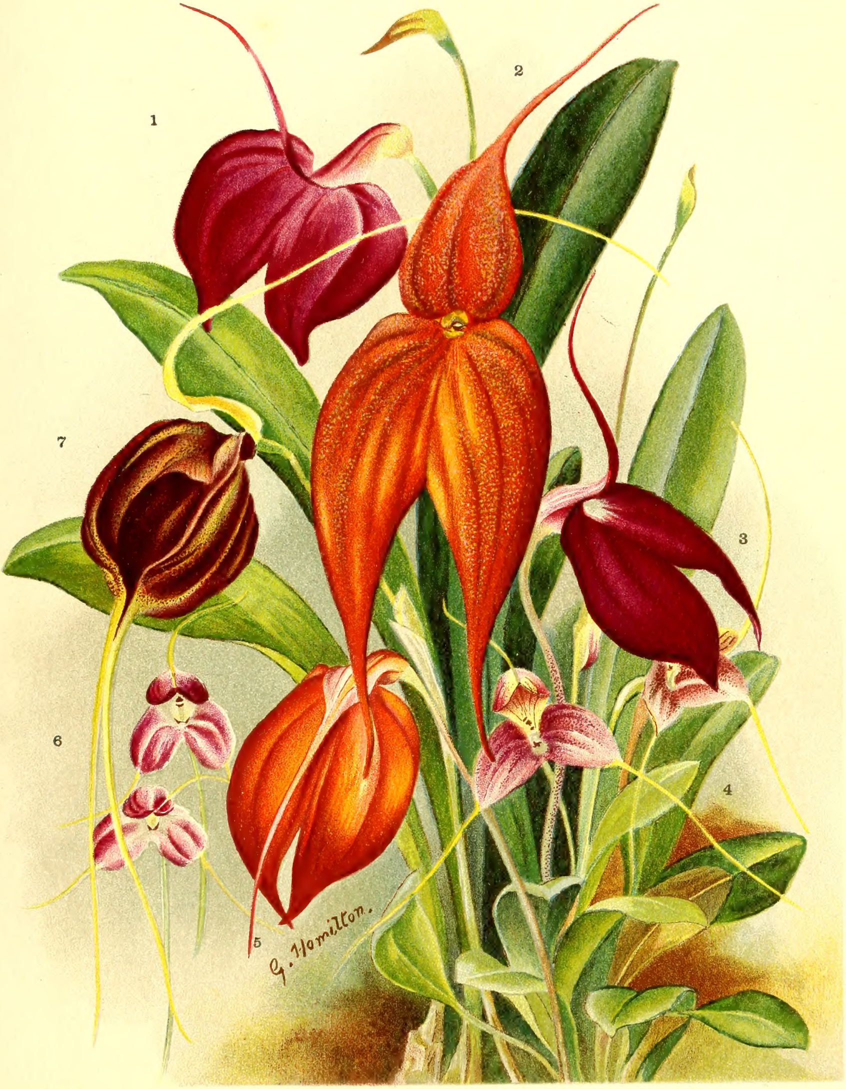
LÆLIAS AND CATTLEYAS.

1. Lælia cinnabarina. 2. Cattleya Mendeli. 3. Lælia purpurata. 4. Cattleya citrina. 5. Cattleya labiata.



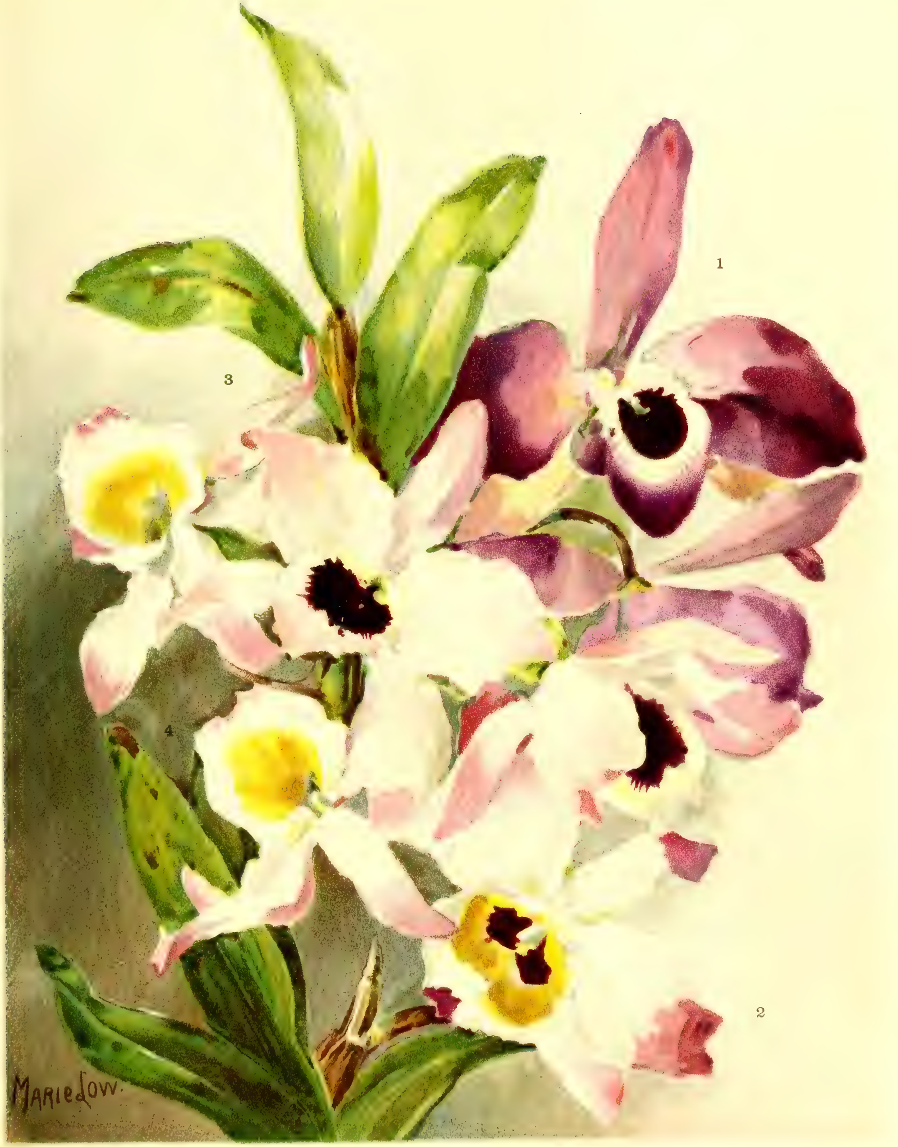
LAPAGERIAS AND PASSIFLORA.

1. Lapageria rosea (Warnham Court variety). 2. Lapageria alba 3. Passiflora princeps. 4. Rodochiton volubile



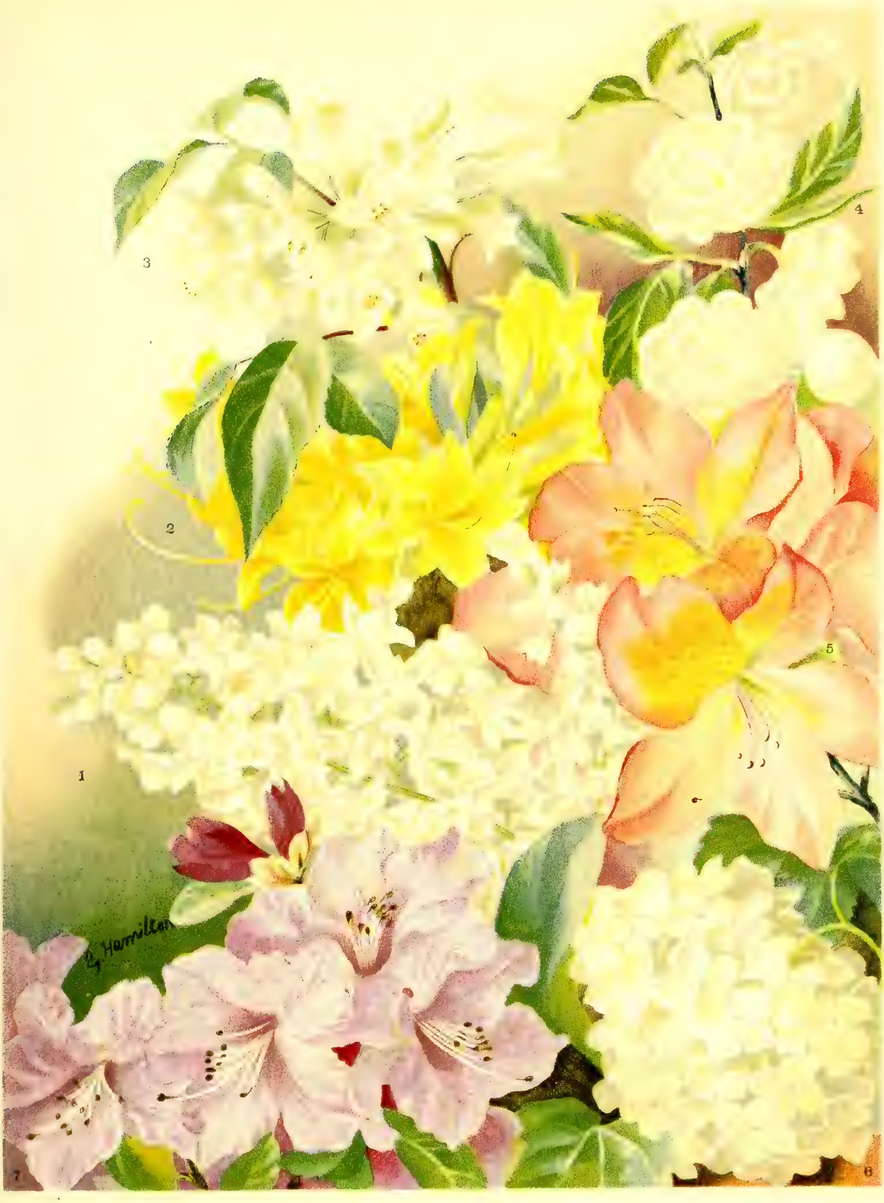
MASDEVALLIAS.

1. Harryana conchiferum. 2. Veitchi grandiflora. 3. Lindeni. 4. caudata Estradæ. 5. ignea.
6. Armini. 7. ephippium (syn. trochilus).



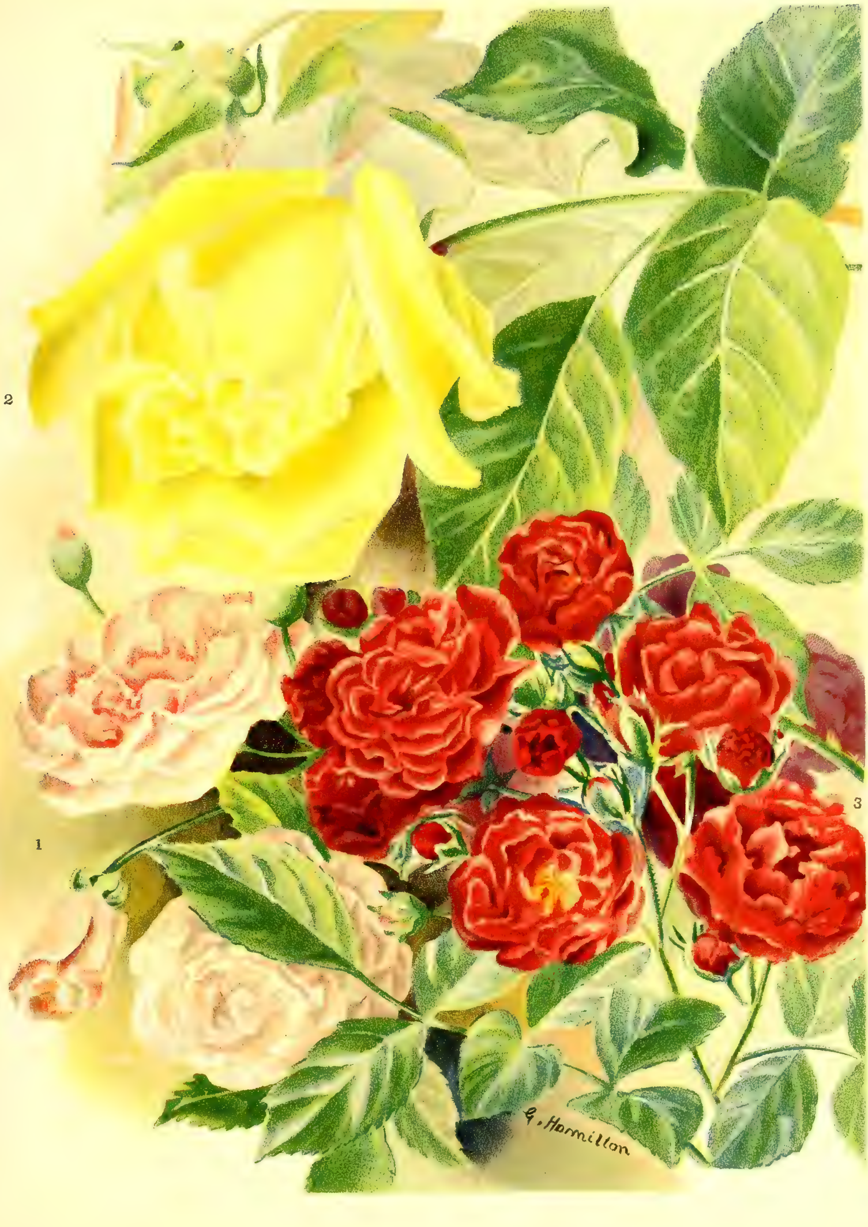
GROUP OF ORCHIDS FROM MR. CHAMBERLAIN'S COLLECTION.

1. Dendrobium nobile nobilius. 2. D. Wardianum. 3. D. Leechianum. 4. D. Findleyanum.



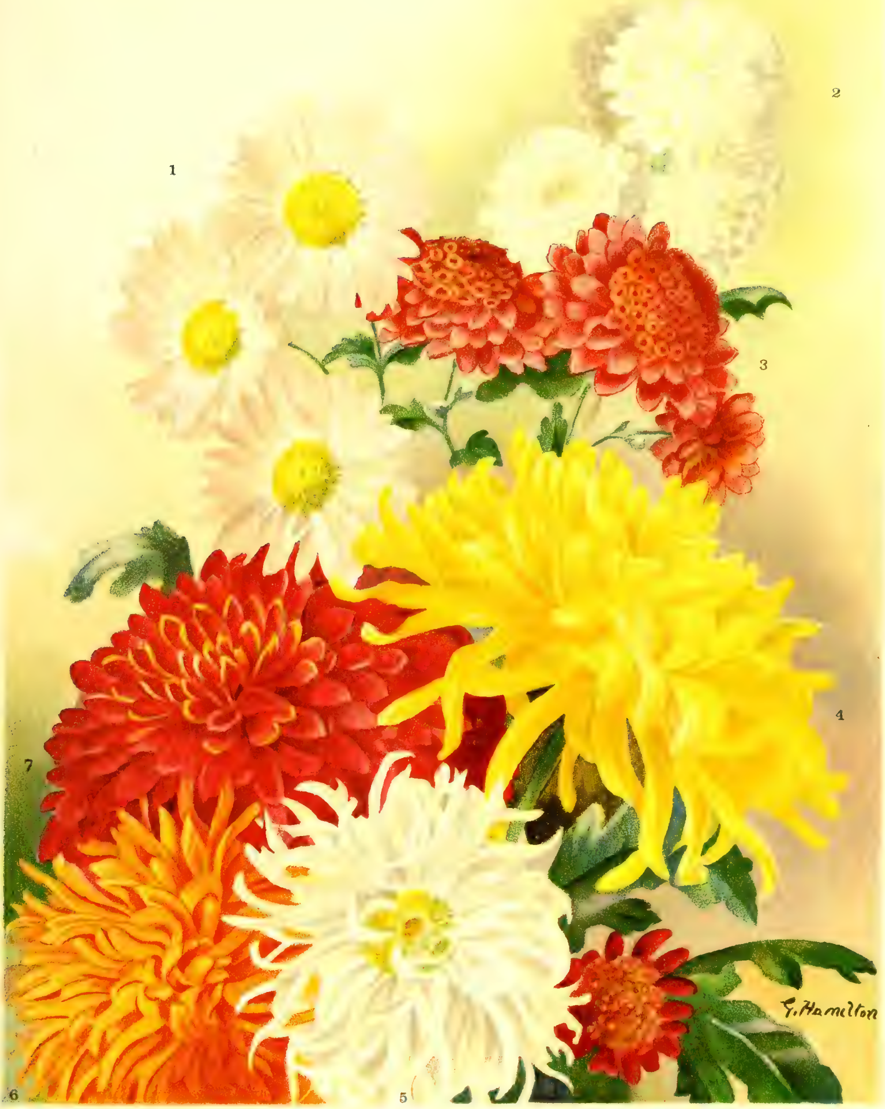
FORCED SHRUBS.

1. Double Lilac, Madame Lemoine.
2. Ghent Azalea, narcissiflora.
3. Staphylea colchica.
4. Prunus sinensis flore pleno.
5. Azalea mollis.
6. Viburnum Opulus (Gueldres Rose).
7. Rhododendron Early Gem.



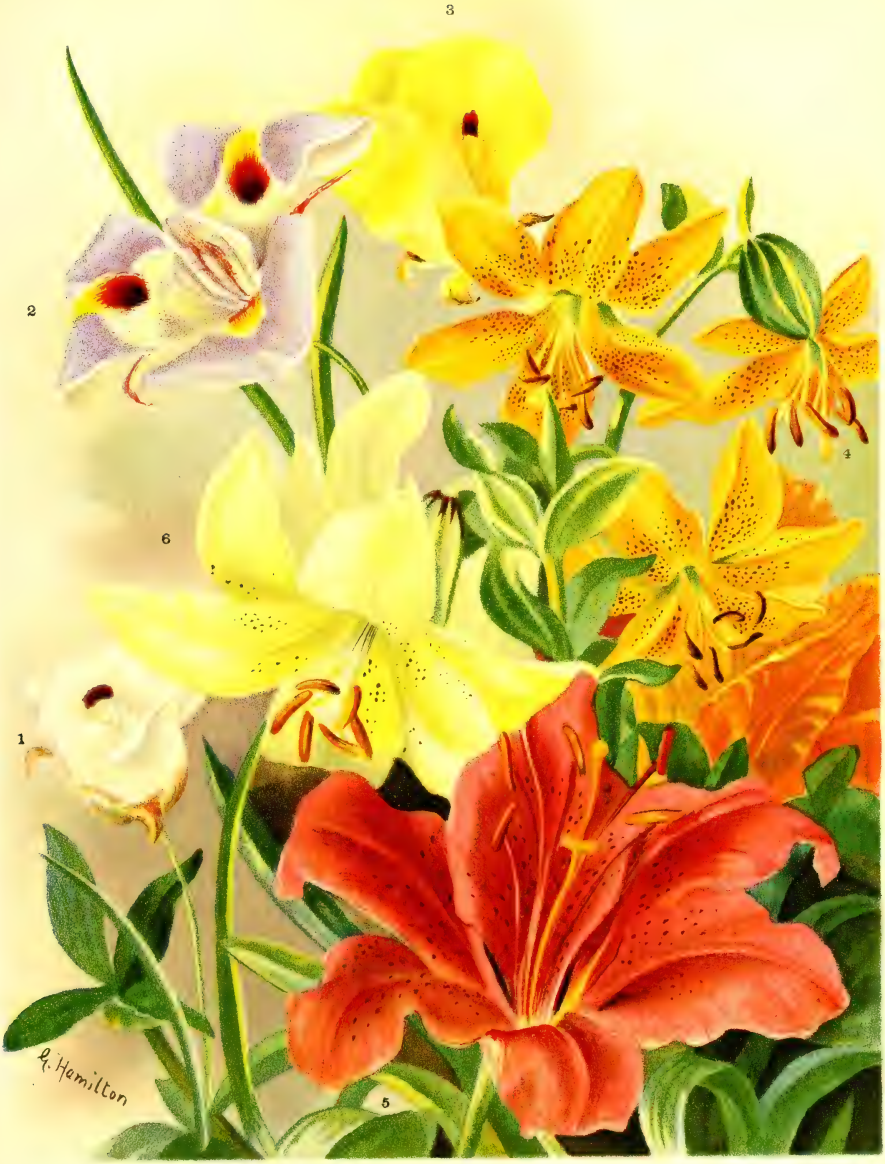
CONSERVATORY ROSES.

1. Psyche. 2. Maréchal Niel. 3. Crimson Rambler.



DECORATIVE CHRYSANTHEMUMS.

1. Miss Rose. 2. Snowdrop. 3. Calliope. 4. Buttercup. 5. White Jane. 6. Source d'Or. 7. Cullingfordi.



LILIUMS.

Calochortus (Mariposa Lily)—1, pictus; 2, Eldorado strain; 3, venustus citrinus.
Liliums—4. Hansoni; 5, Thunbergianum atro-sanguineum; 6, Szovitzianum

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JOHN WRIGHT, F.R.H.S.

EDITOR OF THE "JOURNAL OF HORTICULTURE," "GREENHOUSE AND WINDOW PLANTS"
AND "THE FRUIT GROWER'S GUIDE"
AUTHOR OF "PRIMER ON HORTICULTURE," "GARDEN FLOWERS AND PLANTS"
AND "MUSHROOMS FOR THE MILLION"
MEMBER OF COMMITTEE OF THE ROYAL HORTICULTURAL SOCIETY
GOLD MEDAL ESSAYIST OF THE WORSHIPFUL COMPANY OF FRUITERERS
CHIEF INSTRUCTOR ON HORTICULTURE FOR THE SURREY COUNTY COUNCIL
ETC., ETC.

With Coloured Illustrations

BY MISS GERTRUDE HAMILTON AND MISS MARIE LOW

AND

NUMEROUS ILLUSTRATIVE DIAGRAMS BY F. W. BURBIDGE, F.L.S., GEORGE SHAYLER, F.R.H.S.
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loam to one of peat, in a finely-divided state, with a moderate addition of silver sand. Sow somewhat thickly, and cover the smaller seeds lightly, the larger more deeply, or all with about their own depth with soil. Place the receptacles in a temperature of 70° to 80°, on a stage or base thickly covered with ashes, which must be kept constantly moist to nullify the drying effects of the hot-water pipes immediately underneath; or the pans may be plunged in cocoanut fibre refuse over brisk bottom heat; in either case cover with squares of glass or layers of moss, and shade heavily. Germination is never very rapid. In some cases several months may elapse before it takes place, and care must, therefore, be taken not to sour the soil by excessive watering. Nor must it be allowed to become dry, as this also may be fatal to success, and the cultivator should endeavour to keep the soil steadily moist without saturating it.

POTTING.—When the seedlings have formed two or three leaves, not before, remove the plants carefully without breaking the roots, and place them singly in very small pots, using a compost similar to that in which they were raised. Do not bury any part of the stem, either at this or subsequent pottings, as the base ought always to just rest on the soil. Arrange the newly-potted seedlings closely together on an ash-covered stage, in brisk moist, heat, and afford shade from the sun; or, if convenient, they are perhaps better plunged in a bed of cocoanut fibre refuse. When the pots are becoming well filled with roots, a small shift should be given, returning the plants to their old quarters, and allowing them more room as they need it.

Do not transfer from small into much larger pots at one operation, but increase the sizes gradually, and the plants ought not to be moved into very large pots, or finally into tubs, before the old soil has become fully occupied by roots. As a rule, every second spring is often enough to re-pot Palms. The roots are naturally coarse, and should not be cut or injured by uncoiling those which may be matted about the drainage. In the process of re-potting move the crocks, if possible, and fill the cavity firmly with soil. For the larger pots or tubs afford ample drainage, and employ a compost of equal parts of good fibrous loam and peat, with an admixture of silver sand. This answers well for most Palms. The soil must be used in a coarse, fibrous state for the larger shifts, packing it firmly about the roots. The peat may be reduced for strong plants, and broken charcoal mixed with the loam.

Some of the Palms require more heat than others, as will be duly pointed out, but all must be kept constantly moist at the roots. Though there is danger in over-watering immediately after re-potting, abundance of water is required during the summer, also syringing twice a day. Plants that are much root-bound—and it is possible to keep Palms in good health for several years in the same pots or tubs—must be assisted by a fertilising liquid made from cow-manure and soot, applying in a clear state of the colour of pale ale. Surface dressings of steamed bone flour, alternating with the liquid manure, are also beneficial. By care in watering and judgment in supporting, also keeping the leaves clean by sponging and syringing, Palms may be kept healthy, even in rooms, for several years.

SELECT PALMS.

Acanthophœnix.—A. crinita, from the Seychelles, the only species cultivated, forms arching fronds and has spiny stems. It should be grown in a warm greenhouse or plant stove, in which the night temperature seldom falls below 55°.

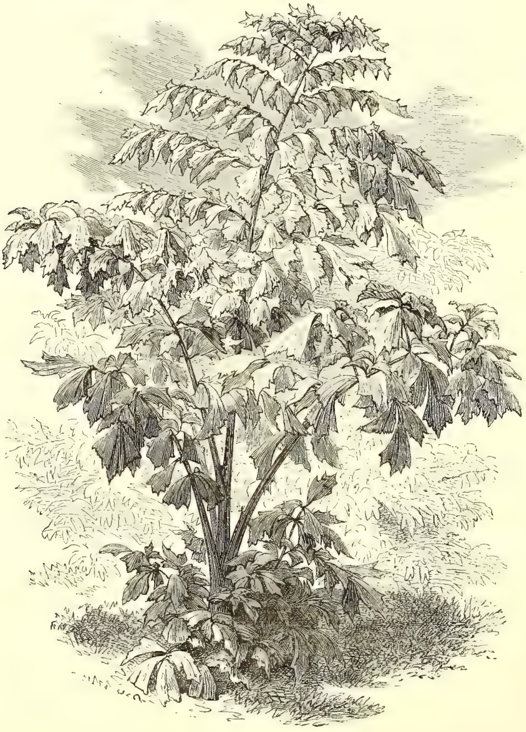

Fig. 113. Caryota excelsa.

Areca.—A. alba, Mauritius, has slender, smooth stems, and forms leaves 6 to 8 feet long. In a young state it is suitable for house and table decoration; stove or conservatory. A. Baueri, Norfolk Island, is a noble species; large specimens form grand leaves 6 to 9 feet long; stove. A. lutescens, grown in a stove, attains to a large size; it is ornamental by its yellow stems, also in a small state. A. rubra, Mauritius, is another fine species, that may be grown in a warm greenhouse or conservatory; the young leaves being red in colour, changing to green with age. A. sapida grows tall, and does not require much heat. A. Verschaffelti is a fine stove species resembling A. Baueri. Arecas may have a richer compost than that recommended for Palms generally.

Brahea.—B. filamentosa is also known as Washingtonia filamentosa and Pritchardia filamentosa. It is a near ally of Chamærops, quite as easy to grow, and more ornamental in appearance. It forms fan-shaped leaves, along the edges of which are numerous thread-like pendulous filaments, while the leaf stalks are slender and spiny.

Calamus.—Of this fairly large genus three species are ample for most collections. These are C. asperrimus, Java, which forms large leaves, 3 to 6 feet long, with hairy leaflets. C. ciliaris, India, a species with large, handsome, plume-like leaves; and C. Lewisianus, India, a fine but rare kind. All should be grown in a warm house, and in a young state are effective house plants.

Caryota.—C. sobolifera, Malacca, is elegant in a young state, and very imposing in appearance when fully grown, having long, slender stems, surmounted by a head of large arching leaves. C. urens, India, is strong growing, having a stout stem, and the fully-developed leaves measure 9 to 12 feet in length. The handsome C. excelsa is admirably shown in Fig. 113. Caryotas should be grown in a stove or warm conservatory When the stems flower the plant dies, unless suckers have formed.

Chamædorea.—This genus comprises several attractive species, introduced principally from South America. They form tall slender stems, surmounted by heads of large arching leaves, and are most effective when interspersed with various other low-growing plants. Some of the most popular are: C. amazonica, C. elegans, C. glaucifolia, C. graminifolia, and C. Wendlandi. They are seen at their best in a moist, shady position in a plant stove; and the compost recommended for them is two parts spongy peat with one part each of loam and sand.

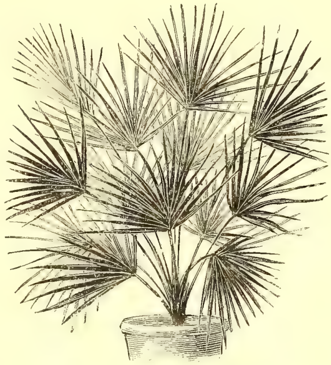

Fig. 114. Chamærops Fortunei.

Chamærops.—A genus more remarkable for its comparative hardiness than for the beauty of the species. The plants form pan-like leaves, supported on slender armed petioles, which have their bases enveloped by coarse-netted tissue. The species grown are: C. excelsa, East Indies; C. Fortunei (Fig. 114), Northern China; and C. humilis, Europe and North Africa. They can be grown in greenhouses and conservatories during the winter, and in the open air during the summer, while they stand the winter in favourable positions in mild localities. Pot in a loamy compost.

Cocos.—A very elegant and popular genus of stove Palms. Those grown the most extensively are: C. plumosa, Brazil, stem stout and straight, leaves 3 to 15 feet in length, and furnished with leaflets clustered together in bunches; C. Romanzoffiana, Brazil, with long, gracefully-arched leaves; and C. Weddelliana, South America. The last-named is one of the most elegant Palms in cultivation; charming in a young state for table decoration, and large plants equally effective in groups. They ought to be kept in comparatively small pots, and grown in a shady, moist position.

CORYPHA.—C. australis, syn. Livinstonia australis, is a nearly hardy species, bearing a strong resemblance to Chamærops humilis, but brighter—an excellent greenhouse and room Palm, also for gardens in summer.

DÆMONOROPS.—This genus is nearly allied to Calamus, succeeding under similar treatment. The species most generally grown are: D. melanochætes, Malay Archipelago; D. palembanicus, Sumatra; and D. periacanthus. They are very graceful, and enjoy warmth.

EUTERPE.—E. edulis, Brazil, is a tall-growing, effective species, requiring plenty of heat and moisture, also strong, loamy soil.

GEONOMA.—All the species are dwarf-growing and elegant. The most popular is G. gracilis, Brazil, one of the best of table plants in the way of Cocos Weddelliana; G. intermedia, G. Schottiana, and G. Leemani are also worthy of culture. They should be grown in a warm house, and be kept well supplied with moisture.

KENTIA.—For decorative purposes generally, and for exhibition, Kentias are practically unrivalled. They are ornamental in a small state, and in the course of a few years may be grown into magnificent specimens. K. Belmoreana, Lord Howe's Island, is the most elegant in a young state and develops into a handsome specimen, but is less robust and serviceable than K. Forsteriana, also from Lord Howe's Island, while H. Canterburyana, from the same part of the world, also possesses a fine constitution, and, like the preceding, is a noble exhibition plant. K. McArthuri and K. Wendlandi are other species that may be grown with advantage. During ths greater part of the year Kentias should be arranged in a shady position in a well-heated palm-house or conservatory, cooler shaded quarters during the summer not injuring them. The plants should be potted in equal parts of loam and peat, with silver sand, and must have abundance of water, varied by weak liquid manure, when the pots are filled with roots.

Latania.—L. borbonica, syn. Livistona chinensis, China (Fan Palm), a noble species that can be grown in a warm greenhouse, and quickly develops into large specimens in a stove, retaining its lower leaves for a long time. L. rubra, syn. L. Commersoni, Mauritius, has crimson leaf-stalks, and the leaves are of a deep bronzy green; stove. Pot in strong loam, peat and sand, and water copiously.

Licuala. — A genus of elegant dwarf - growing Palms, requiring high culture in plant stoves. L. grandis, New Britain, and L. peltata, India, are worthy in inclusion in most instances.

Livistona. — Strong-growing Palms, with large, fan-shaped leaves. L. altissimas, Java, L. Hoogendorpi, Indian Archipelago, and L. rotundifolia, are the species principally cultivated. They are best grown in a stove heat, but may be transferred to conservatories during the summer. Abundance of water and some liquid manure ought to be applied to well-established plants.

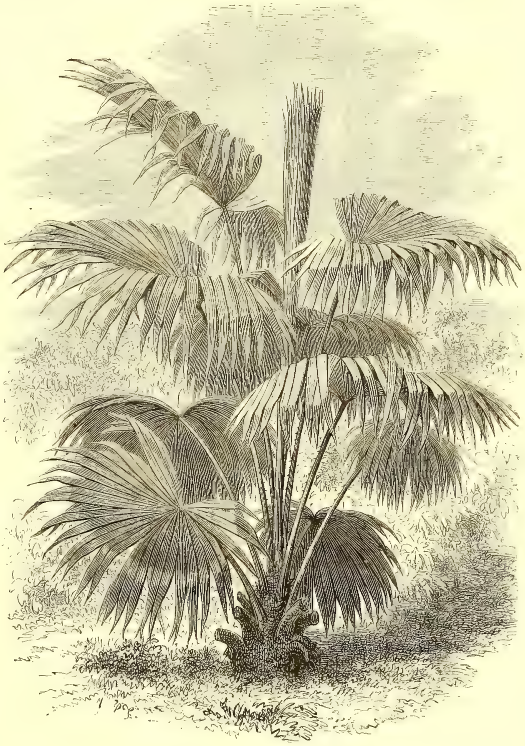

Fig. 115. Latania borbonica.

Phænicophorum.—P. seychellarum, syn. Stevensonia grandifolia, is a noble stove Palm that suffers if the temperature falls too low or the air becomes dry. Large, well-grown specimens are majestic in character, with bronze green leaves like large shields.

Phœnix.—Easily raised greenhouse Palms from Asia and Africa; of free growth, and are ornamental as well as serviceable. The species most often met with are P. dactylifera (the Date Palm), P. reclinata, P. rupicola, and P. sylvestris. They are elegant, popular, and much used for decorative purposes.

Pritchardia.—P. pacifica is a noble stove Palm from the Pacific Islands, well worthy of general cultivation.

Raphis.—Slender-stemmed Palms, distinct, serviceable, ornamental, and easily grown in a greenhouse or conservatory. P. flabelliformis, China, of which there is a variegated form, and P. humilis, Japan, are desirable species, and produce offsets freely.

Sabal.—A small genus from America, with fan-shaped leaves. They are amenable to greenhouse culture, but grow more satisfactorily in stoves. The best are S. Blackburniana, Bermuda, and S. umbraculifera, West Indies, both attaining to noble proportions.

Seaforthia (Ptychosperma).—S. elegans is an easily cultivated, tall, strong-growing species from Queensland and New South Wales. It thrives in either a plant stove, warm greenhouse, or conservatory. Pot in a mixture of equal parts loam and leaf-soil, with a little sand.

Thrinax.—Several beautiful species belong to this genus, and are ornamental when either of small or large size. The leaves are fan-shaped, finely-divided, and borne on long slender petioles. The most popular species are T. elegans, syn. T. radiata, from Trinidad, T. excelsa and T. parviflora, both from Jamaica. All the species should be assigned shady positions in a warm house.

Veitchia.—V. Canterburyana, syn. Hedyscepe Canterburyana. Lord Howe's Island is nearly allied to Kentias, and should receive similar treatment.

Verschaffeltia.—V. splendida, syn. Regelia magnifica, a noble, broad-leaved species from the Seychelles, attains a height of 12 to 60 feet. Pot in two parts fibrous peat to one of loam, adding charcoal and sand freely. It should be grown in a moist, shady part of a plant stove.

CYCADS.

Although usually associated with Palms, Cycads, as has been previously stated, are quite distinct from them, belonging to the order Cycadaceæ, which is nearly related to Coniferæ. They form unbranched stems "marked with leaf-scars, and having large rays in the wood, along with punctuated ligneous tubes." Leaves pinnate, stout, and some of them spiny. Cycads, like Palms, yield various useful products, the most generally grown, C. revoluta, supplies a kind of starch which is used as sago. Caffra bread is made from Encephalartos and Zamias yield arrowroot. Cycads in a fossil state have been found in the coal measures of this country. There are seven genera and several species of the very distinct plants under notice; but only those that are generally cultivated can be usefully described here. They are raised from seeds in the manner described for Palms, and also increased by rooted suckers or offsets.

Species for Cultivation.

Cycas.—C. revoluta is the most popular of all the Cycads. It is a native of China, and handsome specimens are to be seen at most plant exhibitions, as well as in numerous conservatories. The stem is stout, and is surmounted by a crown of long, dark-green pinnate leaves (Fig. 116). C. circinalis, East Indies, also a good exhibition and warm conservatory plant, forms a moderately stout stem, while the leaves are erect (as shown in the background of the figure) and from 6 to 12 feet long, shining green on the upper surface and paler below. Potted in strong loam and river sand, they make quick progress in a moist plant stove.

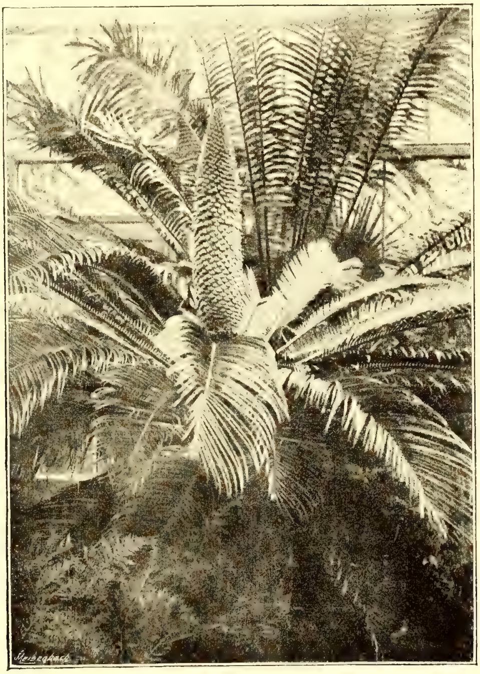

Fig. 116. Cycas revoluta.

Dioon.—D. edule, so called from the fact of its producing edible seeds, a native of Mexico, when well grown proves ornamental and attractive. It forms a very stout stem and pinnate, glaucous green leaves, 3 to 6 feet in length. Pot in loam and river sand. While the leaves are forming the plants should have the benefit of the heat and moisture of a plant stove; but during the rest of the year may be kept in a greenhouse or conservatory.

ENCEPHALARTOS.—This genera bears a strong resemblance to C. E. Altensteini, Cape of Good Hope; forms a stout trunk and dark-green pinnate leaves, 2 to 6 feet in length. E. villosus, Natal, has a short, thick trunk, clothed with woolly scales and leaves, 3 to 6 feet in length, tapering at the base and apex. Pot in strong, sandy loam, and grow in a light part of greenhouse. When growing strongly supply water copiously, but when the growth is stationary, which may be the case for several years, not much water should be applied.

ZAMIA.—The trunk and leaves of this genera bear a strong resemblance to Cycas. Z. Fraseri, Z. Miguelli, and Z. spiralis are handsome and distinct species that may be grown in greenhouses and conservatories. Pot in equal parts of loam and peat, adding sand freely. Shade from sun.

CACTI AND SUCCULENTS.

IN his interesting handbook on Cactaceous plants, published in 1884, but now, we think, out of print, Mr. R. Lewis Castle, F.R.H.S., truthfully observes: "Grotesqueness, in form or habit, is rarely found in combination with floral beauty, yet no family of plants affords more remarkable examples of this union of widely divergent qualities than the great and peculiar Cactus order."

The familiar term Cactus (plural Cacti) was originally given by Theophrastus to a succulent or fleshy-stemmed plant covered with spines, and Linnæus grouped all such plants under that generic title. The term is, however, now botanically obsolete, and the species cultivated are arranged under their respective genera, such as Cereus, Echinocactus, Phyllocactus, Mammillaria, Melocactus, Opuntia, and others that will be referred to in this work. The whole family of cactaceæ are dicotyledonous, but other "succulent" plants often, if not usually, grown with them, such as Agaves and Aloes, are essentially different, being monocotyledonous.

With few exceptions cactaceous plants are leafless, the flowers being produced directly from the fleshy stems. These stems vary enormously in altitude and configuration, some growing twenty or more feet high, others only a few inches; while the flowers of some species are, in size and colour, magnificent; in others, chaste and charming. The fruits, or fleshy seed receptacles, are, in the case of several species, such as Cereus speciosissimus, C. triangularis (strawberry pear), and Opuntia vulgaris (prickly pear), edible, and, when well ripened, of agreeable flavour. The beauty of some of the smaller species mainly rests in the symmetrical formation of the spines. These vary in colour, character, length, and number—amounting in some cases to upwards of 50,000 on a plant. It may be interesting to note that the cochineal of commerce consists of small, dried insects, resembling the mealy bug and vine scale, which are found on Opuntias or Nopaleas. In cultivation, however, no insects must be allowed on the plants.

Cactaceous plants are of easy cultivation, and large and interesting collections of the dwarf-growing species may be accommodated in a small, light greenhouse, in which a

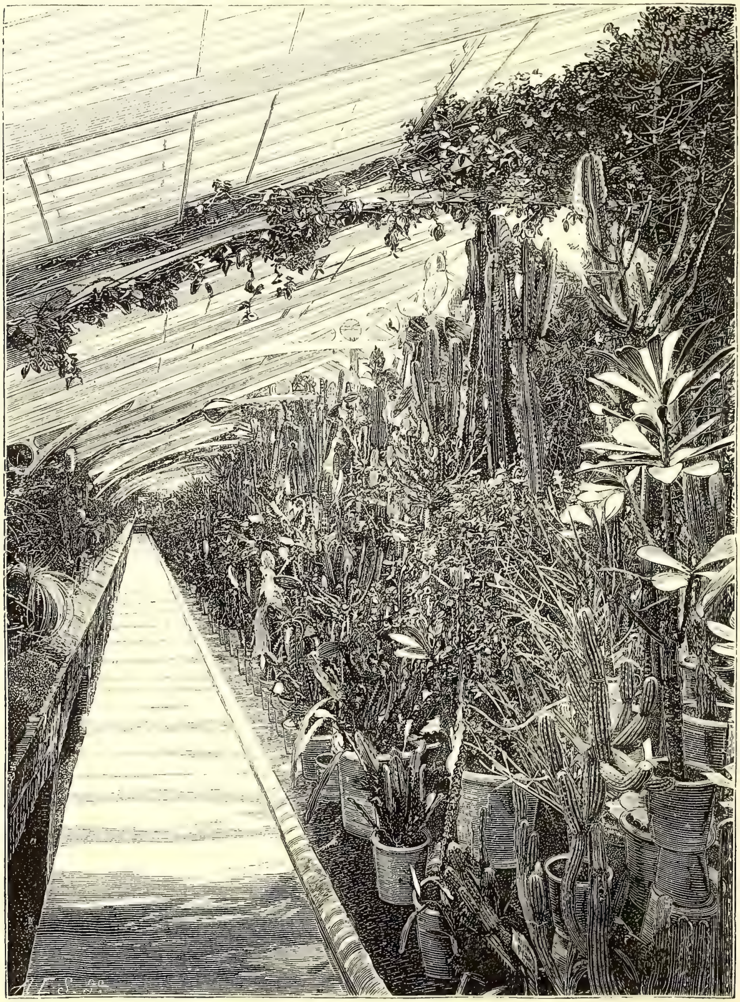

Fig. 117. A House of Cacti and Succulents.

moderate temperature can be maintained. These remarkable plants are mostly grown by amateurs who cherish their curios. The number of fanciers has for some time been increasing, and they support a special monthly organ, the "Cactus Journal."* As affording evidence of the zeal of its Editor, Mr. F. A. Walton, he writes under date May 19th, 1899: "I have lately returned from a journey of 20,000 miles, especially to see and collect cacti." They are most numerous in Mexico, which is the congenial home of many other succulent plants, but several species are found in the various arid regions of the earth. The tall-growing kinds need lofty structures for their cultivation in this country, and all types may be seen in the famous Cacti and succulent house at Kew. (Fig. 117.)

The establishment of collections of the plants under notice is not an expensive luxury, as only the rarest species are highly priced, the majority being within the means of all who can afford to erect a small, unpretentious structure. Although cactaceous plants may be grown with a variety of other plants under glass, they succeed best when kept by themselves in lighter houses and a drier atmosphere than suits most of the other occupants, especially during the summer. A strong sun and dry atmosphere are most conducive to a sturdy floriferous habit of growth. What adds to the popularity of Cacti is the fact that comparatively small plants, if in good health, are nearly or quite as attractive as those much larger and of greater age. The plants are best arranged on light, dry, spar-covered staging, but they are nearly as happy on the wood shelves or stepped stands to be found in the smaller greenhouses, such positions answering better than a low, damp, or shaded position. Those genera or species from tropical countries should have the warmer end of a house, so that all may be kept together in a winter temperature of 45° to 55°—a few degrees lower, if the house is quite dry, not injuring the plants—increasing to 70° to 85° when the sun gains its greatest power during the summer.

PROPAGATION.

Cacti are variously propagated by cuttings or offsets, grafting, and seeds. The first-named method is the most common. Small offsets, from 1 inch to 2 inches in length, may be carefully detached from Mammillaria, Echinopsis, Pilocereus, and others of a globular habit of growth; and cuttings of Cereus, Opuntia, Phyllocactus, Rhipsalis, and any other kinds that form slender, angular stems. It is of vital importance that offsets without roots, and especially cuttings, be laid on a sunny shelf for the wounds to dry before insertion. This may take a fortnight, more or less, according to the substance of the stems, but, at the same time, it is well to guard against undue shrivelling. Place each offset or cutting, singly, in small, well-drained pots, filled with coarse, sandy, or gritty soil, taking care not to bury them deeply; and to support them, if needed, with a small stick. They should not be shaded at any time, or receive any water till rooted, but an occasional light syringing ought to be given to prevent excessive shrivelling. These conditions must be rigidly observed or cuttings of choice species may be lost.

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* E. W. Allen, 4, Ave Maria Lane, Paternoster Row, London.

Grafting is a very simple matter, and is desirable in the case of the more delicate kinds, which should be placed on a strong growing stock, the Cereuses answering well for the purpose. The process is the same as grafting Epiphyllums upon the Pereskia stock, as shown on page 182, Vol. II. In this instance, wedge-grafting is the plan recommended. Where both the stock and scion are broad, as in the case of a Mammillaria scion and Cereus speciosissimus stock, it is advisable to make horizontal sections, fitting these together and keeping them in position by supports and raffia ties, not making these too tight.

Seedlings should be raised early in the year, in order that they may become large enough to pass safely through that trying ordeal—the winter. Fresh, or nearly new seeds are the best, and these, under favourable conditions, will germinate in three or four weeks. Fill heavily-drained pots or pans with fine loam and sand, and after making this firm and level, give a gentle watering. Two or three hours later sow the seeds thinly, and cover with one-eighth of an inch of soil. Place in a temperature of 75° to 80°—preferably, as they will germinate though not so quickly in less heat—cover with a square of glass, and afford shade till the seedlings appear. Tilt the glass over them at first, and gradually expose the young plants to the sun and air, keeping the soil steadily moist, never very wet. When large enough to handle, place the seedlings separately in thumb pots, using a mixture of two parts loam to one of leaf soil, adding sand freely. These small plants should be kept growing in a sunny position and regularly supplied with water through the summer, reducing it in the autumn, and only giving enough during the winter to prevent shrivelling.

GENERAL TREATMENT.

It is most unwise to over-pot Cacti and succulents generally. Unless the soil is speedily occupied by roots, it is liable to become sour, and this may lead to the ruin of the plants. When young plants in small pots become somewhat root-bound, transfer them to a larger size; but established plants ought not to be disturbed very often, and, if properly attended to, will remain in a healthy condition for several years in the same pots. From February to April is the best time for re-potting. In every case use clean pots, and, for the more delicate kinds, fill them one-third full with clean crocks, one-fifth of drainage answering for the stronger growers, covering the crocks in each instance with moss. The generality of Cacti will succeed well in a compost of three parts good fibrous loam, one part leaf soil, and two parts made up of broken bricks, lime, or mortar rubbish, sand and charcoal, using this in a moderately dry state. Some of the old soil should be removed from the roots, and any of the latter dead or dying cut away, re-potting somewhat firmly. If gentle heat can be afforded the newly-potted plants it will be to their advantage. In any case, give no water for a week or more, according to the weather, but syringe the plants lightly every evening after sunny days.

In their natural habitats, Cacti and succulents are subjected to a long period of great heat and drought. This they are prepared to endure, as during the rainy period the plants store up a good stock of food and moisture in readiness for the severe strain on their resources. It may not be possible, and it is not particularly desirable, to closely imitate these conditions, but those who would succeed in flowering Cacti satisfactorily, must adopt somewhat similar treatment. A very "rainy season" must not be brought about, to the extent of souring the soil, but early in March all plants very dry at the roots should have a good soaking of water, and be kept steadily moist until August, syringing in the evening of dry days. Gradually withhold water in August, and cease the supply altogether in September. From that time till the following February or March no water should be given, and a dry atmosphere, not necessarily with the aid of fire-heat, except to prevent low temperatures, maintained. Under this treatment some of the species may present a slightly discoloured and shrivelled appearance, but from this they will quickly recover after they are watered in the spring, and the drying-off process will cause them to flower freely. The genera to which severe drying should not be applied are the slender-stemmed Phyllocacti, Epiphyllums, and Rhipsalis, all of which ought to be watered sparingly during the winter. Arranging Cacti and the choicer succulents in the open air after they have made their growth is a risky practice, heavy rains sometimes saturating the soil more than is good for the plants.

INSECT PESTS.

Mealy bug is the worst insect that Cactus growers have to encounter, and whole collections have been much disfigured by it. Owing to many of the plants having a thick covering of either hairs or spines, cleaning by hand is almost impossible, and the best remedy is petroleum and soft soap. In every gallon of water, heated to 120°, dissolve 2 ozs. of soft soap, and then add 2 ozs. or a wineglassful of petroleum, mixing these ingredients, and keeping the oil from floating on the surface by means of a syringe. Lay the infested plants on their sides, and forcibly syringe them with the petroleum mixture, this quickly cleaning them. An overdose of the oil might greatly disfigure the plants, hence the necessity for returning every second syringeful of the mixture into the can holding it. Those at all nervous about the effect of the petroleum upon their plants may follow the insecticide with a syringing of clear water, and should also shade from bright sun for the next few days. The stages, both in the under and upper sides, also every part of the house where nothing is growing, must be scalded before the plants are re-arranged in their positions. White scale, another common pest, may be cleared off the plants by the aid of the same mixture. Thrips and green fly are easily destroyed and kept under by an occasional application of nicotine fumes.

SELECTIONS OF CACTACEOUS PLANTS.

Under the above denomination, as previously stated, are several genera and sub-genera of plants closely allied in prevailing characteristics, but differing greatly in form and stature. Many are formidably armed with spines, while others have smooth, fleshy stems; some are of rampant growth, forming impenetrable hedges in their native habitats, while others are dwarf and club-shaped, or assume various grotesque forms; some produce insignificant flowers, but the blooms of most are beautiful. Species worthy of cultivation will be named under the different sections alphabetically.

CEREUS.—TORCH THISTLE.

A very large genus, which includes upwards of two hundred cultivated species. Our selections must therefore be limited, yet in the aggregate will suffice for a good representative collection. They will be arranged in three groups, the plants in each showing well-marked divergencies. 1.—The Globose and Columnar form, remarkable for the luxuriant growth of many of the species, and the striking beauty of the flowers generally. 2.—Species more slender in growth, and trailing or pendant in habit. 3.—Night-flowering species, which are so interesting to those who possess them because of the peculiarity indicated, apart from the beauty of their handsome blooms.

GLOBOSE AND COLUMNAR SPECIES.

CEREUS AZUREUS.—Chili. Somewhat rare; stems blue.

C. BAUMANNI.—Tall, slender growth; flowers freely produced; vermilion and orange.

C. BERLANDIERI (synonymous C. repens and C. Deppi).—Texas and Mexico. Creeping habit; flowers 4 inches across; purple and rose.

C. BLANKI.—Mexico. In habit resembling the preceding; flowers deep-rose, flushed crimson.

C. CÆSPITOSUS. — New Mexico. Dwarf-growing; flowers deep rose; yellow anthers.

C. CŒRULESCENS.—Mexico. Strong-growing, attractive, bluish-green stems; large white flowers.

C. CIRRHIFERUS. — Mexico. Prostrate; branching; with erect flowering stems; flowers bright red.

C. ENNEACANTHUS.—Texas. Dwarf stems, with tufts of long spines; flowers purple.

C. GEMMATUS.—Tall-growing; large yellowish-green flowers.

C. JAMACARU. — Tall, branching, pubescent stems, which are specially attractive by their colour, which is nearly blue.

C. MULTIPLEX. — South Brazil. Globose-stemmed; flowers 6 to 8 inches long, and the same in width; white. C. multiplex cristatus is a variety with curiously fasciated stems.

C. PERUVIANUS. — Peru. Stems tall, spiny, and glaucous blue; flowers large, white, tinged with red. C. peruvianus monstrosus, a form with curious irregularly twisted stems, is known as the "Rock of Ages."

C. PROCUMBENS. — Mexico. Spreading, prostrate stems, from which upright branches grow to a height of 3 or 4 inches; flowers rose-purple.

C. SPECIOSISSIMUS.—Mexico. The most popular of all Cactuses, and deservedly named the "most beautiful"; slender stems; flowers, freely produced; intense crimson or violet.

SEMI-SCANDENT OR TRAILING SPECIES.

C. FLAGELLIFORMIS.—Peru. Stems prostrate. Most effective when grafted on the Pereskia or strong-growing Cereus stocks; or, grown in baskets, the long tail-like stems arching gracefully. We have had them 6 feet in length, covered with bright rosy-red flowers.

C. MALLISONI.—A hybrid obtained by fertilising the flowers of C. speciosissimus with pollen from C. flagelliformis, the parentage being unmistakable; flowers 4 inches across; bright red, with pale yellow stamens.

C. SERPENTINUS. — South America. Stems round, green, and spiny; in a young state stiff and erect, afterwards lengthening considerably and requiring support; flowers freely produced, large and fragrant; colour, pinkish white inside, purplish outside.

NIGHT-FLOWERING SPECIES.

C. ESTENSUS.—Trinidad. Stems long, rope-like, and bluntly triangular; flowers developed along the stems somewhat sparingly; colours, yellow, green, and red.

C. FULGIDUS.—Hybrid; stems bright green, and slow-growing; shy flowering; flowers 6 inches long and the same in diameter; bright orange scarlet.

C. GRANDIFLORUS.—West Indies. Truly a grand species; stems almost cylindrical, bearing tufts of wool and short stiff spines; flowers freely produced by strong plants, lasting a few hours only, but may be kept a whole day if cut (before expanded) and placed in water. They are about 1 foot across; sepals bright yellow; petals pure white, arranged cup-like, enclosing numerous yellow stamens and a club-shaped stigma.

C. G. MAYNARDI.—This, though unfortunately rare, is a splendid hybrid between grandiflorus and speciosissimus, raised by Mr. H. Kenny, gardener to Viscount Maynard, Easton Lodge, Dunmow, in 1837. It flowered in the collection of the late Mr. Major, of Croydon, and a plant was sent by him to Easton Lodge about twenty years ago. The flowers are of the first size, and the colour crimson and violet. (Fig. 118.)

C. Lemairi.—Antigua. Bears a strong resemblance to C. grandiflorus.

C. Macdonaldiæ.—Honduras. Stems slender and cylindrical. Properly treated plants afford flowers successively during the summer. These are remarkably fine, measuring 14 inches across, but in other respects not differing materially from those of C. grandiflorus.

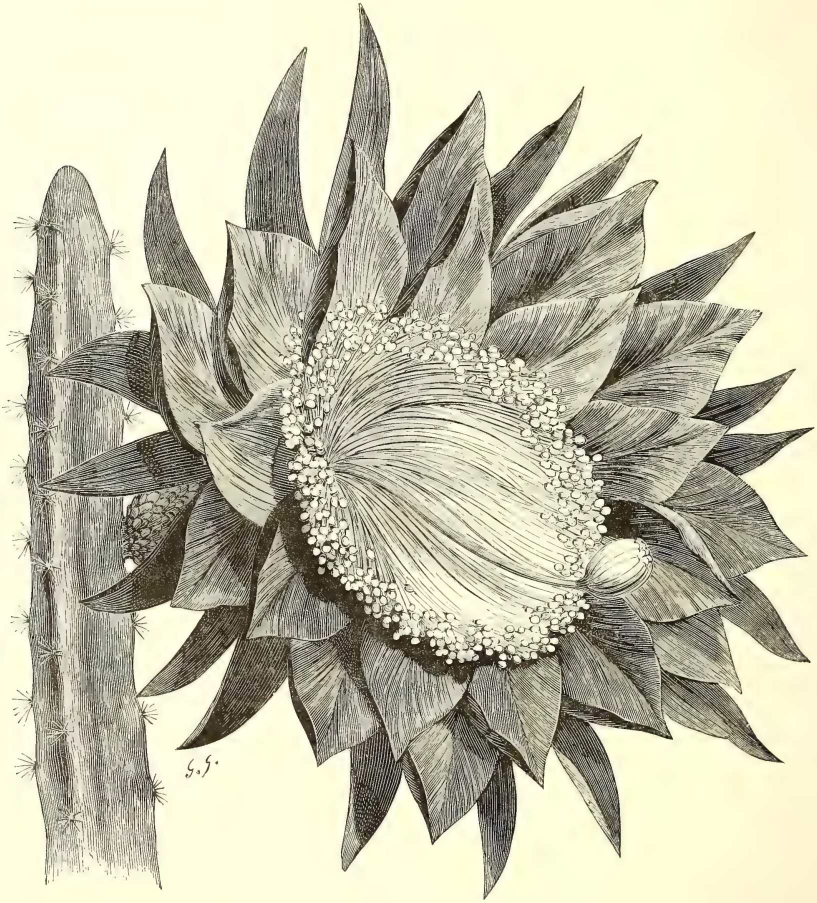

Fig. 118. Cereus grandiflorus Maynardi.

C. nyticalus.—Mexico. Stems four to six-angled, much given to the production of aërial roots; flowers equal in size to those of C. grandiflorus; orange and pure white.

C. triangularis.—Mexico. Stems stout and triangular; flowers 1 foot in length and the same across; sepals narrow and green, petals broader; pure white, with yellow stamens.

E. Echinocereus.—Species are not sufficiently distinct to form a genius, and the best of them are included under the heading Cereus.

ECHINOCACTUS.

Species of what is known as the Hedge-hog Thistle are, by their habit and stem character, worthy of inclusion in all collections. They thrive best in gentle heat. The majority are natives of Mexico.

Selection.

E. aureus.—This has golden spines, and is a decided acquisition to the group.

E. brevihamatus.—Small dark-green stems, central spine hooked; flowers pink, shaded rose.

E. capricornis. — Stems prettily spotted; flowers large, yellow.

A. cornigerus.—Spines very broad and remarkably strong, arranged on a stout, much-ridged, sphere-shaped stem; flowers purple; a very desirable species.

A. denudatus. — Spines arranged spider-like on a dwarf stem.

E. electracanthus. — Large-growing; spines very bold and strong; flowers yellow.

E. Grusoni.—The Golden Cactus. Spines golden-yellow, arranged on a stout stem; a fine species.

E. Le Contei.—Stem large, covered with a network of stout spines set in a cushion of whitish wool; flowers yellow; freely produced.

E. longihamatus.—Stem globose, with prominent ridges; spines extra long; flowers yellow, blotched with red; a distinct and handsome species.

E. lophothele.—Stems greyish; spines long, disposed on quadrangular tubercles; flowers large yellow.

E. multicostatus. — Stem resembling a flattened ball, grassy-green, with numerous twisted ribs bristling with spines; flowers white, striped purple; a desirable species.

E. Ottonis tortuosus.—Brazil. Stem dwarf; balloon-shaped, furnished with rows of spider-like spines; flowers yellow.

E. Pottsi. — Stout, globular-ribbed stems, thinly covered with bristle-like spines; flowers yellow.

E. Simpsoni.—Small and Mammillaria-like; flowers abundant; pale purple.

E. texensis. — "The Devil's Pin-cushion." Low, cushion-like stems, with spines as strong as steel; flowers large, and rose-coloured.

E. Williamsi (syn. Anhalonium Williamsi).—The Dumpling Cactus. Flowers rose, and freely produced.

E. Wislizeni.—The Fish-hook Cactus. Large stems much ridged; spines numerous and long, the stoutest having hooked points; flowers greenish yellow.

ECHINOPSIS.

In addition to being somewhat hardier, this section differs from Echinocactuses in the formation of the flowers, which are remarkable for their great size, length of tube and beauty. They are borne, generally, on small and somewhat stumpy stems. When properly treated the plants flower profusely. They should be kept in a root-bound state, also free from offsets, and must be carefully rested during the winter, receiving little or no water, especially if comparatively low temperatures are maintained. All are easy of propagation, and none need be grafted on other Cactuses, as they grow strongly on their own roots. There are upwards of thirty species in cultivation, coming principally from Mexico and South America.

SELECTION.

E. DECAISNEANA. — Large, handsome, pure white flowers, tinged with yellow; very free.

E. EYRIESI.—Pure white, sweet scented; a lovely flower.

E. LAGERMANNI.—Large, rosy-red flowers.

E. MULTIPLEX.—Large, delicate rose; E. m. cristata and E. m. picta are good varieties.

E. OXYGONA.—White, stained with rose; fragrant and popular.

E. PENTLANDI.—Flowers large; brilliant red; distinct and somewhat rare; E. P. longispina and E. P. Scheeri are distinct varieties.

E. SCHELHASI.—Handsome white flowers.

E. TRIUMPHANS FLORE PLENO.—Fine, double, rosy-red flowers.

E. TUBIFLORA.—Flowers large, pure white, and very attractive.

E. ZUCCARINI. — Beautiful white, jasmine-scented flowers. Good varieties are E. Z. cristata, E. Z. flore pleno, and E. Z. Rohlandi.

EPIPHYLLUM.—See Vol. II., page 181.

MAMMILLARIA.

A large genus, comprising upwards of three hundred species, and of these about one-fifth are in general cultivation. Mammillarias (nipple-bearers) are mostly one-stemmed plants, but in a few instances dense tufts are formed by an aggregation of growths. The stems are covered with spirally arranged tubercles or mammillæ, these naturally varying in the different species. The great majority may be grown in a warm, sunny greenhouse, also under frame culture during the summer. The plants do not require much root room, and if the drainage is effective, re-potting every fourth season will suffice. Single-stemmed species are propagated from seeds, and the tufted kinds by division of the stems. Mexico is the home of the greater portion of Mammillaria, a few species coming to us from South America.

SELECTION.

M. ANGULARIS—Strong green stems; flowers rosy-purple.

M. APPLANATA.—Short thick stems; flowers white, tinged with red, followed by bright red seed pods.

M. BOCASANA.—Head covered with hair-like fuzz; rare and valuable.

M. CAPUT-MEDUSÆ.—An attractive species with white flowers.

M. CENTRICIRRHA. — Attractive stems and pretty flowers.

M. CIRRHIFERA. — Neat, long, ivory-white stems; flowers rose-coloured. M. c. longispina is a desirable long-spined variety.

M. CORNIFERA.—Stems dark slate colour; large purple flowers; free.

M. DISCOLOR.—Spines attractive; flowers rosy-purple.

M. DOLICHOCENTRA.—Handsome stems; flowers pale purple, followed by rose-coloured fruits.

M. ELEGANS.—Of neat growth; shy flowering, but said by specialists to be "one of the best."

M. ELONGATA.—Cushion-like growth; flowers tawny yellow, followed by coral-red berries.

M. FISSURATA (syn. Anhalonium fissuratum).—Popularly termed the "Living Rock." Resembles a piece of carving, and is very distinct; flowers light purple.

M. FORMOSA.—Resembles a flattened ball, with white spines.

M. GRACILIS.—A "Thimble Cactus." Tufted growth; flowers tawny yellow.

M. HAAGEANA.—Stout stems covered with tufts of spines; flowers small; bright carmine rose.

M. LONGIMAMMA.—Stems dwarf, covered with long spines; flowers large and handsome; citron yellow.

M. MACROMERIS.—Dwarf; long tubercles, furnished with spines; flowers carmine.

M. MICROMERIS.—The "Button Cactus," so called from its resemblance to a silk embroidered button; flowers small; whitish.

M. PECTINATA. — Dwarf, globose stems; tubercles bearing star-like tufts of stiff spines; flowers large, yellow; desirable species. (Fig. 119.)

M. PLUMOSA.—Resembles a ball of cotton; most attractive.

M. PULCHRA.—Globose stem; egg-shaped tubercles, and tufts of spines set in whitish wool; flowers medium; bright-rose.

M. PUSILLA.—Small, tufted plant; spines thin and bristle-like; flowers yellowish white, striped red.

M. RAPHIDACANTHA.—Needle-spined nipple cactus; flowers purplish violet.

M. RECURVA.—Dwarf stem, with centre spines recurved; free blooming.

M. SANGUINEA.—Stout stem, densely clothed with tufts of pale yellow spines; flowers freely produced; colour bright crimson.

M. SCHELHASI. — A pretty, little, tufted species; flowers white, lined with rose.

M. STELLA-AURATA.—Belongs to the Thimble Cactus group, and considered one of the prettiest; spines numerous, and rich golden yellow in colour; flowers small, whitish, followed by rose-coloured, berry-like fruits.

M. TETRACANTHA.—Stem egg-shaped, and covered with long white spines; flowers bright-rose.

M. VIRIDIS. — Stem dwarf, with hair-like spines; flowers pale yellow.

M. WILDIANA. — Small-stemmed, very attractive species; flowers rose-coloured.

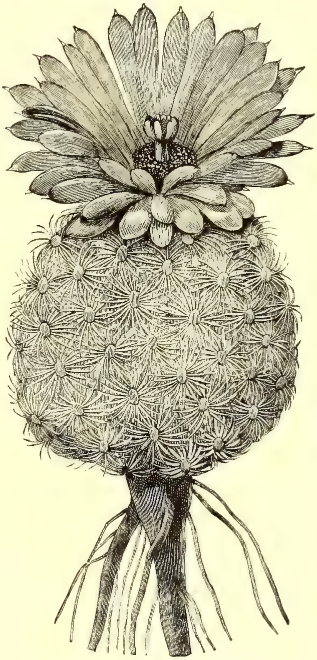

Fig. 119. MAMMILLARIA PECTINATA.

MELOCACTUS.

So-called from the fact of the stems of the plants being of the form of a Melon. Although not particularly ornamental, they are yet distinct from all other Cactuses, more especially as regards their habit of flowering. Each stem is surmounted by a cap, this forming the flower-head, and constantly increases in height while the stem remains stationary, till eventually it resembles a bottle-brush. The flowers are small and are followed by bright red cherry-like berries, containing black shining seeds. Plants are raised from seeds and increased by offsets. Coming from the West Indies, Melocactus (Fig. 120) should have the benefit of a tropical temperature at all times, with a moist atmosphere during the summer months, and all the sunlight possible.

Only three species are generally cultivated, and these are: M. communis.—Stout, globose, much-ridged stems, furnished with numerous clusters of spines, and surmounted by a broad, cylindrical crown, composed of a thick pad of whitish cotton-like substance, from which a number of red spines are developed. Flowers small, red and tube-shaped. M. depressus.—Stem broader than it is high, cut into ten furrows along the sharp angles of which are arranged clusters of pale brown spines. Stem crowned with a cylinder-like cap, this having a "skull-cap" of white wool and red spines. Flowers small, soon wither and remain attached to the dense cluster of rose-coloured berries. And M. Migueli.—Stem oval, dark green, with fourteen ribs; spine tufts small, spines short and black-brown. The cap is cylindrical, about 3 inches in diameter, and composed of layers of white threads, mixed with reddish bristles.

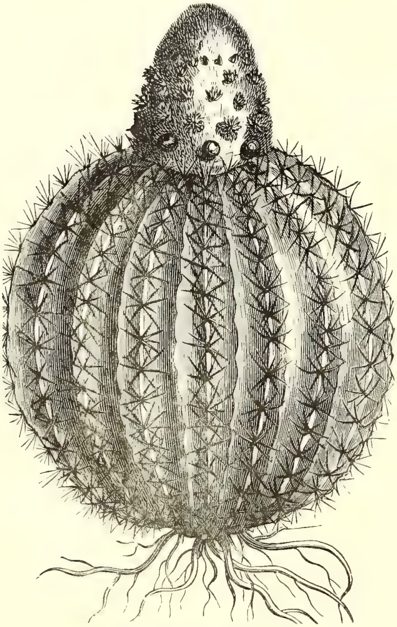

Fig. 120. Melocactus.

OPUNTIAS.

This genus differs from all other cactaceous plants in the peculiar character of their stems and spines, and, to a certain extent, also in the structure of their flowers. There are about 160 species known to collectors, and these naturally vary considerably in their size, ranging from small-trailing many-branched plants to large shrubs, 6 feet to 30 feet in height. In most instances the branches are flat when young, but in a few species they are round. All have fleshy stems, which eventually become round and woody. They consist, at first, of a series of fleshy joints superposed upon each other, the joints varying much both as regards size and shape. The spines are sharp, barbed, and very irritating when they pierce the flesh. The majority of

Opuntia flowers (Fig. 121) are either yellow or orange in colour, some few being either greenish-white, purple, or red. In a few instances they are followed by fruit of an ornamental and occasionally edible character—the Prickly Pear (O. ficus indica) for instance. Opuntias are raised from seed, and either small pieces or good-sized branches root freely in pots of sandy soil, and a dry heat. Their cultural requirements are of the simplest description.

SELECTION

O. ARBORESCENS. — Elk Horn Cactus. Cylindrical stems; long spines, flowers purple.

O. AURANTIACA.—Dwarf; cylindrical stems; flowers bright orange.

O. BASILARIS.—Fan-shaped joints; flowers rich purple.

O. BOLIVIANA.—Stems one foot high, erect and branching; roundish joints; flowers yellowish.

O. BRACHYARTHRA.—The Jointed Finger Cactus. Stems resembling a jointed finger.

O. CYLINDRICA. — Stems and joints cylindrical; flowers red.

O. FICUS INDICA.—The Prickly Pear Cactus. Robust, erect-growing, stems becoming hard and woody; flowers sulphur-yellow; fruit pear-shaped, and covered with tufts of bristles.

O. FRUTESCENS. — Thin-stemmed, many-branched species; flowers greenish-yellow; fruit scarlet and pear-shaped.

O. LEUCOTRICHA. — Erect stems; flattened joints covered with hair-like spines, bearing a resemblance to the Old Man Cactus; flowers yellow.

O. MICRODASYS.—Dwarf; joints flattened and nearly circular, thickly covered with cushions of orange-yellow bristles. O. m. rufida is a variety with reddish-brown bristles.

O. MONOCANTHA. — Tall-growing; oblong joints with long spines; flowers sulphur-yellow, followed by edible fruit.

O. RAFINESQUII.—Prostrate habit of growth: joints flat and obovate, with few spines; flowers bright sulphur-yellow; fruit pear-shaped and eatable; it is hardy in dry positions.

O. SALMIANA.—Erect branching stem, joints cylindrical; flowers yellow, streaked with red.

O. SENILIS.—Joints covered with long white hairs in the way of the Old Man Cactus—Pilocereus senilis.

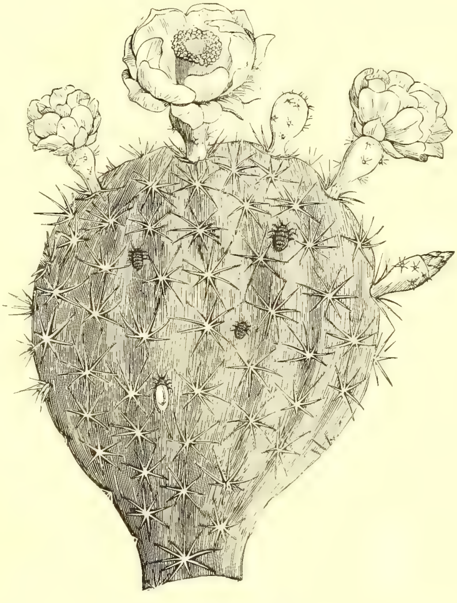

Fig. 121. THE INDIAN FIG.

PELECYPHORAS—Pelecyphoras, or the Hatchet Cactus, so-called from the shape of the tubercles, is represented by a single species only, and this is both rare and difficult to keep alive after it is obtained. It differs from Mammillaria only in the hatchet-like form of the tubercles. Propagated by means of seed and by offsets when procurable. P. aseliformis.—Stems simple, till about 3 inches high, after which offsets are developed at the base; flowers large, and produced at the apex of the stems; colour purple. P. a. concolor, P. a. pectinata, and P. a. cristata are varieties differing slightly from the original species.

Pereskia (Gooseberry Cactus).—Although principally used as stocks for grafting Epiphyllums, some of the species are sufficiently attractive to find a place in many collections of Cacti. Pereskias do not convey the impression of being Cactuses, but are closely related to Cereus and Epiphyllum. They have erect or trailing stems and branches, forming dense bushes. The branches are woody, thin, and furnished with spines; the leaves are large, laurel-like, succulent, and tenacious. The flowers are borne singly or in panicles, and resemble a single rose. The fruit is shaped like a gooseberry, and covered with short bristles. Pereskias are propagated by cuttings, every short length of branch with a leaf or two attached rooting readily in heat, and may be soon grown to a size suitable for either grafting or flowering. P. aculeata has orange-like leaves and white flowers. P. a. rubescens has longer, narrower leaves, tinged with red below. P. Bleo is a stout-branching shrub, the stems very spiny; flowers rosy-red. P. amapola, P. spathulata, and P. zinniæflora are also in cultivation.

PHYLLOCACTUS.

Phyllocacti, as the name implies, have in some instances flattened leaf-like stems, but in others the stems are three-angled, and the margins deeply notched. These notches are the leaf divisions, and the stems are really made up of so many modified leaves, these becoming more cylindrical and woody with age. It is from the notches that the plants produce their gorgeous flowers, much as other plants develop flowers from the axils of their leaves.

Phyllocacti are natives of Tropical America. They can be raised from seed, but are usually increased by division of the plants and by cuttings of the branches, placed, after drying, in small pots of sandy soil and arranged on a sunny shelf. Their growing season is from May to August inclusive, and what re-potting is necessary should be done early in May. Much root room is undesirable, the most root-bound plants frequently producing the greater number of flowers. If the larger plants are given a small shift every third or fourth season that is often enough, especially when they are kept in a greenhouse or cottage window.

The plants are the most extensively grown for the beauty of their flowers, of all the family to which they belong, and specimens from ten to twenty years old or more are grown and flowered in cottage windows in various parts of the country. Plants with from half-a-dozen to thrice that number of brilliant or pure trumpet-shaped blooms are very beautiful. A few species will be named, but in addition to them are many charming varieties that have been raised from seed, and one of the prominent features in the Annual shows of the Royal Horticultural Society in the Temple Gardens is the group of Phyllocacti arranged by Messrs. James Veitch & Sons. Blooms are represented in every imaginable colour found in cactaceous plants, and are admired by thousands of visitors.

Select Species.

P. Ackermanni.—Flowers rich scarlet, and freely produced.

P. albus superbus.—Beautiful creamy-white fragrant flowers; very popular.

P. anguliger.—Flowers white and sweet-scented; winter flowering.

P. crenatus.—Flowers pale cream colour, and fragrant; free flowering.

P. grandis.—Large creamy-white flowers; night blooming.

P. Haagei.—Flowers flesh-colour, changing to carmine.

P. Hookeri.—Very large white flowers, sweetly scented; night blooming.

P. Jenkinsoni.—Medium size, cherry-red flowers; freely produced.

P. Kermesina magnus.—Extra large flowers; orange, striped with red.

P. latifrons.—Flowers large, creamy-white; expanding in the night.

P. Peacocki.—Large flowers; brilliant crimson, shot with purplish violet; very fine.

P. speciosissimus Feltoni.—Handsome purple violet flowers.

Pilocereus.—This is a small genus closely allied to cereus, and only the one species, P. senilis (" Old Man "Cactus), is generally cultivated. The plants should be grown in the warmest part of a heated cactus house and in the full sun. During the summer, or the growing season, they ought to be kept moist at the roots, but should not be watered during the winter. About the upper portion of the stems of comparatively young plants of the " Old Man " Cactus are formed numerous shaggy locks of white wiry hair, which causes the plants to bear a strong resemblance to the neglected head of an old man. The plants are of slow growth, attaining to a height of four feet in about twenty-five years. Other species known to collectors need not be enumerated here.

Rhipsalis.—The Mistletoe Cactus (Fig. 122). Some of the species in this genus are remarkable imitations of plants altogether distinct from Cactuses, and are interesting accordingly. They have round or angular leafless stems, some much branched and drooping, others more erect. The flowers are small and numerous, followed by small transparent bead-like fruits. Rhipsalis are easily raised from seed, and cuttings root readily in a brisk heat. A few varieties, notably R. sarmentacea and R. penduliflora, succeed well grafted on thin-stemmed cereus. Some of the kinds thrive best and are seen to greater advantage when suspended near to the glass in a warm house. They should be shaded during the hottest part of sunny days. The most popular species are: — R. Cassytha. — Tropical America; the plant when in fruit bearing a strong resemblance to mistletoe. R. crispata. — White flowers and white pea-like fruits. R. Houlleti.—Brazil; stems long and graceful, branching freely; flowers straw-coloured and fragrant; a popular species. R. mesembryanthemoides. — South America; compact Mesembryanthemum-like habit of growth; white star-like flowers.

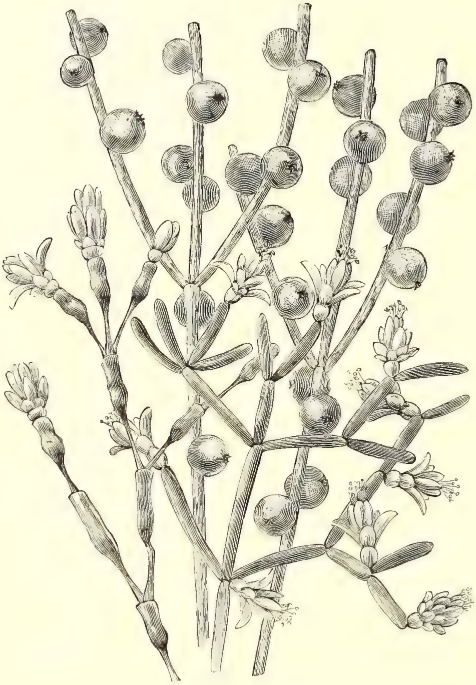

Fig. 122. Rhipsalises.

SUCCULENTS.

As already intimated, succulents are admirably adapted for associating with Cacti, and, in fact, there is no hard-and-fast cultural line dividing them. Some of the genera previously given as Cacti are actually as much succulents as those to be briefly described in this chapter, and it follows that the methods of propagation and cultivation that answer well in one case are equally applicable to the other. No good purpose would, therefore, be served by reiterating what has already been given in that direction.

AGAVE.

This large genus of dwarf Liliaceus plants, comprises species of a noble, massive character. The best known is Agave americana, commonly known as the American Aloe, erroneously said to flower once in a hundred years. Plants of the larger growers are suitable for growing in some conservatories, and out-doors in the summer; other species are equally ornamental, but require much less room. All can be increased by suckers, when these can be obtained, and it is also possible to raise plants from seed. The following species are to be met with in limited collections of Cacti and succulents:—Agave Celsiana.—Mexico; leaves, glaucous, twenty to thirty in a rosette, 1 to 2 feet long and 4 to 5 inches broad, furnished with strong, horny spines; flowers purplish-brown. A. coccinea.—Mexico; leaves, twenty to thirty in a dense rosette, green, 1 to 2 feet long, and 4 to 6 inches broad, side prickles, and long terminal spines. A. lophantha.—Mexico; leaves, thirty to forty in a rosette, dull green, rigid, 2 to 3 feet long, 1½ inches broad; flowers greenish, in a dense spike. A. Salmiana.—Mexico; leaves, twelve to thirty in a dense rosette, glaucous green, 2 to 4 feet long, 4 to 6 inches broad, long terminal spines; flowers greenish-yellow. A. Victoriæ Regina.—Mexico; leaves, forty to fifty in a sessile rosette, rigid and dwarf, green with white vertical bands and terminal spines; one of the best. A. dalapensis.—Mexico; leaves about thirty in a rosette, rigid, 1 to 2 feet long, 2 to 5 inches broad; bright green.

ALOE.

A few of these Liliaceous plants are well worthy of general cultivation. They are propagated by seeds, and should be grown in the full sunshine. They come to us principally from the Cape of Good Hope. The following may be chosen for cultivation:—A. arborescens.—Branching or tree-like; leaves green, 1 to 2 feet long, 2 inches broad at the base, with marginal prickles; flowers reddish. A. a. frutescens is more shrubby or dwarfer. A. humilis.—Leaves glaucous green and lined, thirty to forty, in a dense rosette, 3 to 4 inches long and proportionately narrow, marginal prickles. A. longiaristata.—Of dense growth, leaves broad at the base, tapering sharply to a point, spotted (Fig. 123). A. Serra.—Leaves green, swollen, with a saw-like arrangement of prickles. A. variegata.—Leaves close and erect, 4 to 5 inches long, 1 inch broad, green, lined and spotted with grey. An old favourite window plant. A. vulgaris.—Syn. A. vera.—Stem attains a height of 1 to 2 feet; leaves green, copiously spotted with grey, margin whitish and denticulated. A group of Aloes with Epiphyllum Russellianum is given on the following page.

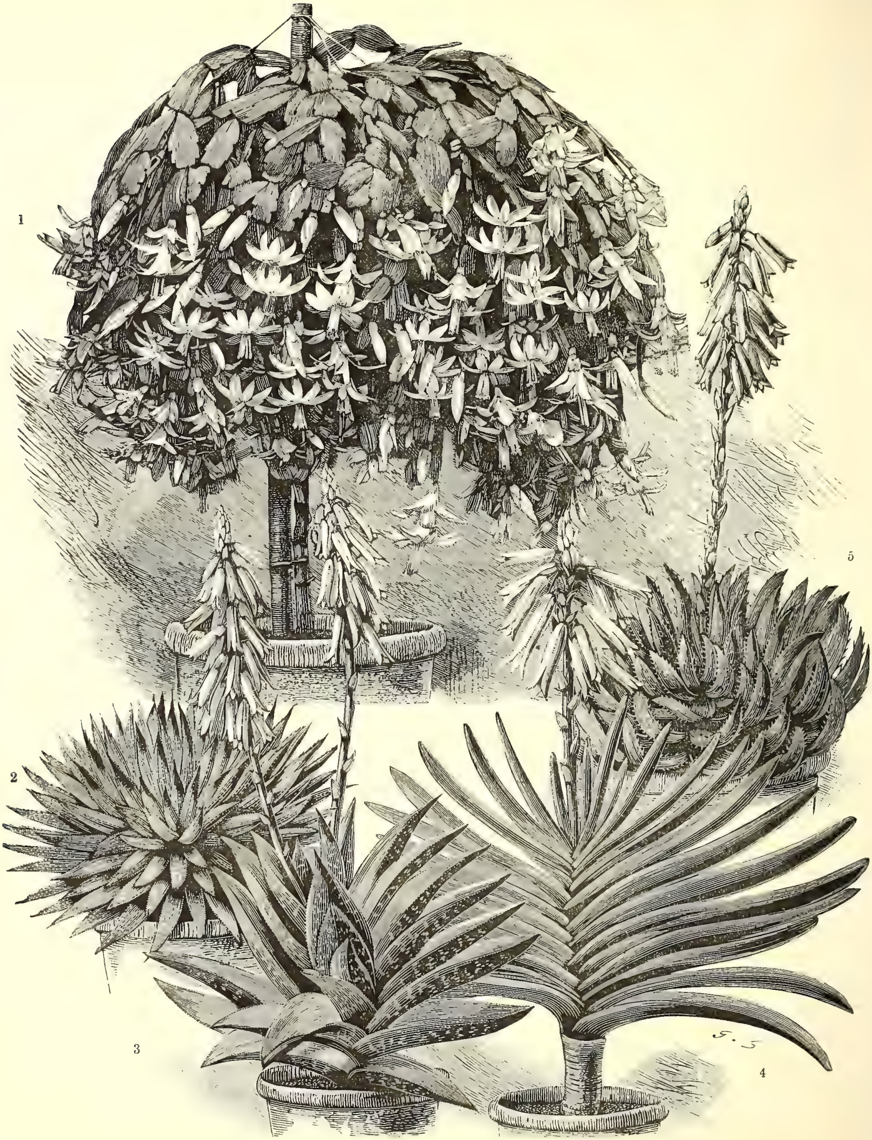

Fig. 123. A Group of Aloes with Epiphyllum above.

1. Epiphyllum Russellianum. 2. Aloe longiaristata. 3. Aloe variegata. 4. Aloe plicatile. 5. Aloe pumila.

CRASSULA OR KALOSANTHES.

The species cultivated for the beauty of their flowers have already been treated upon, see Vol. II., page 171, but there are a few others that are grown for the ornamental character of their leaves. Most of them come from the Cape of Good Hope. They may be raised from seed and increased by cuttings. All should be grown near to the glass. C. Bolusi has fleshy leaves, pale green, with dark blotches, height 3 to 5 inches; flowers pale flesh colour. C. Cooperi. — Neat trailing habit, green leaves, and small white flowers. C. lactea.—Shrubby, twisted branches; leaves attenuated at the base, glabrous, dotted within the margin; flowers snow white (Fig. 124). C. lycopodoides. — Shrubby branching, stem smooth, imbricated leaves, and purple flowers. C. spathulata. — Stems decumbent and branching, leaves roundish and glabrous, and flowers rose-coloured.

Echeveria.—See Flower Gardens, Vol. I., page 223.

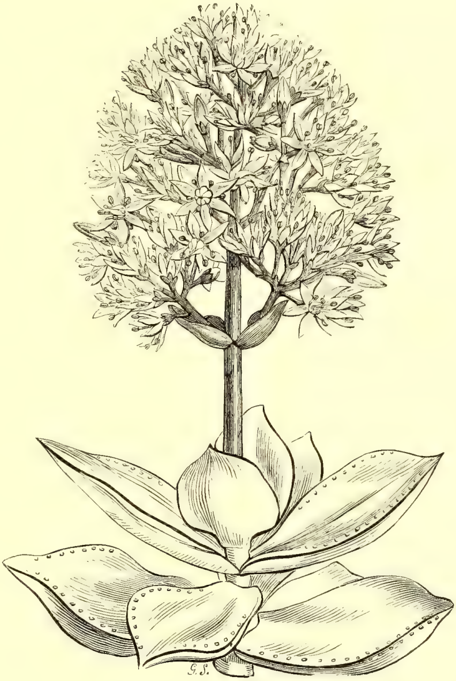

Fig. 124. Crassula lactea.

EUPHORBIA.

A limited number of species of these spurgeworts are, because of their fleshy, more, or less spiny, and often singularly contracted stems, frequently associated with Cacti by admirers of curious-looking plants. A characteristic of Euphorbias is the exudation of milk-like juice from the stems when cut, and which, in some cases, contains medicinal, in others poisonous, properties. Several species are remarkable for their conglomerated or club-like stems. Some of them attain to a great height, while others are dwarf and have a peculiarly stunted appearance. A specimen of Euphorbia, growing in a pot, in the conservatory of Mr. A. H. Smee, at Carshalton, about 3 feet high, and more in circumference, is said to be 100 years old. The following species of Euphorbia are grown with succulents under the treatment already described, and may safely be included in a limited collection:—E. canariensis, E. candelabra, E. lactea, E. natalensis, E. regis jubae, and E. squarrosa.

GASTERIA AND HAWORTHIA.

Gasteria.—A genus of greenhouse succulents, nearly allied to Aloe. They are natives of the Cape of Good Hope. The majority are dwarf, stemless plants, with thick, fleshy, tongue-shaped green leaves, in some instances spotted with white flowers in panicles and reddish. They are propagated by seeds, and easily grown. A good selection consists of G. brachyphylla, G. Croucheri, G. decipiens, G. maculata, G. punctata, and G. verrucosa.

Haworthia.—Attractive little succulents, somewhat resembling Aloes and Gasterias, but smaller; they are natives of South Africa. The leaves are fleshy, transparent, warty, and, in some instances, variegated. Flowers greenish. They are raised from seeds, increased by offsets detached from strong plants; grow in a greenhouse temperature and shade from bright sun. A collection may well comprise: H. attenuata, H. cuspidata, H. denticulata, H. margaritifera, H. radula, H. turgida, and H. lessalata.

KLEINIA AND MESEMBRYANTHEMUM.

Kleinia.—Half-hardy perennials from the Cape of Good Hope, with cylindrical fleshy leaves, bluish-grey in colour. They are propagated by division, and easily grown. Some of the best are K. syn. Cacalia articulata (the candle plant), K. canescens, K. cylindrica, K. ficioides, K. repens (Senecio succulentus), and K. suspensa.

Mesembryanthemum.—Some species of this genus are attractive, both on account of their ornamental growth and because of their glistening, daisy-like flowers, which are freely produced, and of various shades of colour. Plants can be raised from seed, and increased by cuttings, and should be grown in a sunny position. The following are recommended:—M. æquilaterale, M. bicolor, M. cordifolium, M. Ekloni, M. elegans, M. muricatum, M. splendens, and M. violaceum.

STAPELIA.

These extraordinary plants have thick, fleshy, leafless, cylindrical stems, and produce large star-fish-like flowers, covered, in some instances, with hairs. But for the fœtid odour given off by the flowers, and for which they have earned the unenviable title of

Carrion Plants, they would be much more popular than at present. As it is, no collection of succulents can be said to be complete without the addition of a few Stapelias. All are natives of South Africa. Propagated by cuttings of stems, and may be grown successfully on sunny shelves in an ordinary greenhouse. Among those worthy of cultivation are :—S. asterias.—Many-branched, erect, toothed ; flowers large, purple, with yellowish stripes ; May to November. S. Curtisi. — Branches tetragonal, with slightly deflexed teeth ; flowers large, five clefted, sulphur colour, with transverse spots of blood colour. S. gigantea. — Stems stout and creeping, branches downy and erect ; flowers extra large, or 12 to 14 inches in diameter, pale yellowish, covered with irregular brownish red lines, wrinkled and hairy ; a fine species. S. grandiflora.—Branches quadrangular and downy ; flowers large and rather flat, purple, ciliated with grey hairs, and striped with white ; September to December. S. hirsuta.—Branches erect, dingy green, and floriferous at the base. Flowers yellowish, with transverse violet stripes, ciliated with hairs ; July and August. S. patula.—Flowers orange ; July (Fig. 125). S. revoluta. — Branches tetragonal, erect, denticulated ; flowers red, with whitish blotches, smooth and fleshy ; July.

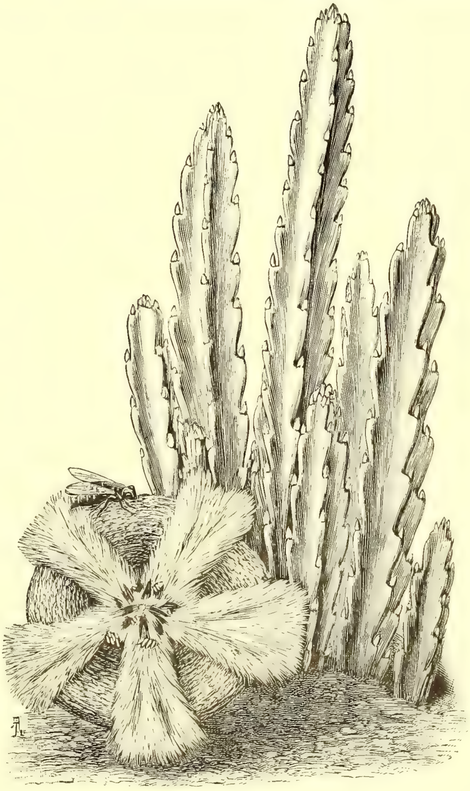

Fig. 125. Stapelia patula.

Other Succulents.—A few to be met with in large collections are :—Bryophyllums calycinum and pinnatum, Bulbine frutescens, Greenovia aurea, Othonna carnosa, Pachyphiton bracteosum, Petrophyes muralis with Rocheas falcata, longifolia, odorata, and perfoliata.

CONSERVATORIES.

CONSERVATORIES are glazed structures either adjoining or situated conveniently near a dwelling-house, and kept constantly gay with flowering and fine-foliaged plants during the greater part of the year. Sometimes they are both ornamental in appearance and well adapted to the purpose for which they are constructed, but more often they form part of a general house design, in which case the architect sacrifices everything to appearance. Those lofty buildings, composed largely of heavy stone, iron, and rolled glass, do add greatly to the general effect, completing one wing, it may be, of a mansion, but the gardeners who are responsible for decorating the interior of such so-called conservatories find them the very opposite of what the name implies, and, instead of preserving plants in a healthy state, effect their ruin; hence not a few of the structures are described by cultivators of plants as "slaughter-houses." Some few climbers and other kinds may be made to grow and flower, also tall palms thrive fairly well in them, but the greater portion of the plants prepared in other parts of the garden and introduced to this kind of "conservatory" soon lose much of their attractiveness, and find their way only too quickly either to a "hospital" or rubbish heap. These high, dark houses are also frequently subject to great fluctuations of temperature, and at times frost can only be kept out with the greatest difficulty, thus making them still more unsuitable for sustaining choice plants in good health. Even if lofty structures are so well heated as to be kept at a comfortable temperature, there is a dryness about them that is injurious to plant life, and in any case small plants in pots cannot be made to thrive so far from the glass, as they must perforce be arranged in the high and sharp pitched roofs of externally ornamental erections indicated.

It is possible to construct conservatories, both ornamental in appearance and well adapted for preserving in good health a great variety of plants grown in them. No specific type of structure can be said to be suitable for erection in any position, so much depending upon the surroundings. That is why it is necessary, or, at all events, most advisable, to call in the assistance of an experienced horticultural builder rather than rely on an architect, however eminent as such, who may have little or no knowledge of the requirements of plants. Nor do local tradesmen, as a rule, possess the knowledge, but professional garden architects do, and are able to combine good external appearance with internal adaptability to the purpose and object for which the structures are erected. In Fig. 126 we have a building suitable for erection against a moderately large dwelling-house. As will be seen, this is not unduly lofty, yet there is head room for palms or other tall-growing plants or trees. It is accessible both from the garden and house, and capable of extension. With a central bed well furnished with plants, a narrow side-staging equally well arranged, pillars and rafters prettily hung or festooned with climbers, a most pleasing interior would be produced. In these light structures the various flowering plants will do well during the winter, while if the fronts are shaded in the summer, fine-foliaged plants and ferns will thrive admirably and impart a pleasing tropical appearance.

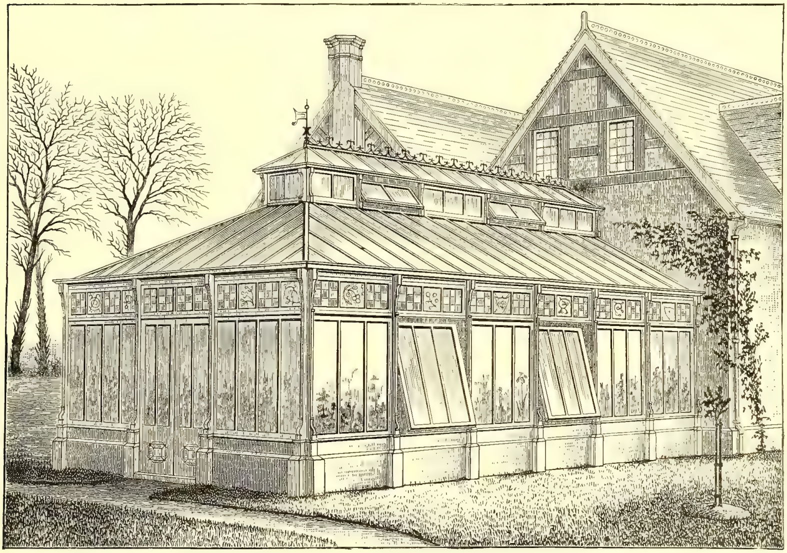

Fig. 126. Small Conservatory.

Conservatories have, perforce, as already intimated, to be specially designed for most positions, and have to be more or less extensive and imposing. Whether adjoining a dwelling-house or mansion, or isolated at no great distance from it, the accompanying illustration (Fig. 127) is suggestive. Such a structure, which is obviously capable of modification or enlargement, would present a fairly imposing appearance, and yet not prove so destructive to plant life as many of the more fanciful buildings are. In a conservatory of this description good scope would be afforded for creating beautiful effects without any serious outlay on plants to fill it. Formal staging of any kind need not necessarily be employed, rock-beds taking the place of a narrow front or side stage, while the back bed could be thinly planted with camellias and orange trees, with tall palms and flowering plants interspersed among them. The bed would naturally prove a good position for the roots of various climbers and wall plants. For the illustrations we are indebted to Messrs. Foster & Pearson, Beeston, Notts. They represent existing structures, and answer their purpose admirably.

Stagings should be dispensed with as much as possible in all conservatories, as an array of pots, which nothing short of crowding the plants to an objectionable extent will hide, is a great eyesore to all endowed with taste in such matters. It may not be possible to have a permanent rock-bed arrangement in all instances, but the margins of beds might be made attractive by forming a low mound of earth to support stones, burrs, and the like, among which may be planted selaginellas, tradescantias, ferns, and other plants with creeping stems. Small pot plants could be plunged among these wherever they would add to the effect, while inside of this band larger movable plants, both flowering and with ornamental foliage, could be sunk up to their rims, just hiding the pots, among other permanently-planted occupants of the house. What may be termed the solid, old-fashioned banks of plants absorb large numbers of various kinds, without attracting more than passing notice; whereas the more artistic light arrangement sustains the interest all through the house, every well-grown plant showing to the best advantage. When space does not admit of rock beds and plant stages must be formed, the most durable and ornamental are those with the framework constructed of iron, this supporting slabs of slate covered by fine spar or clean gravel.

Seeing that conservatories (thanks to their easy access from the mansion and the greater privacy enjoyed) are, or should be, favourite promenades, especially in bad weather, the pathways ought always to be wide and pleasant to walk upon. Coloured pavements of the glazed order, besides being somewhat gaudy, cause too much noise or "clatter" when traversed, and good flagstones are preferable. These

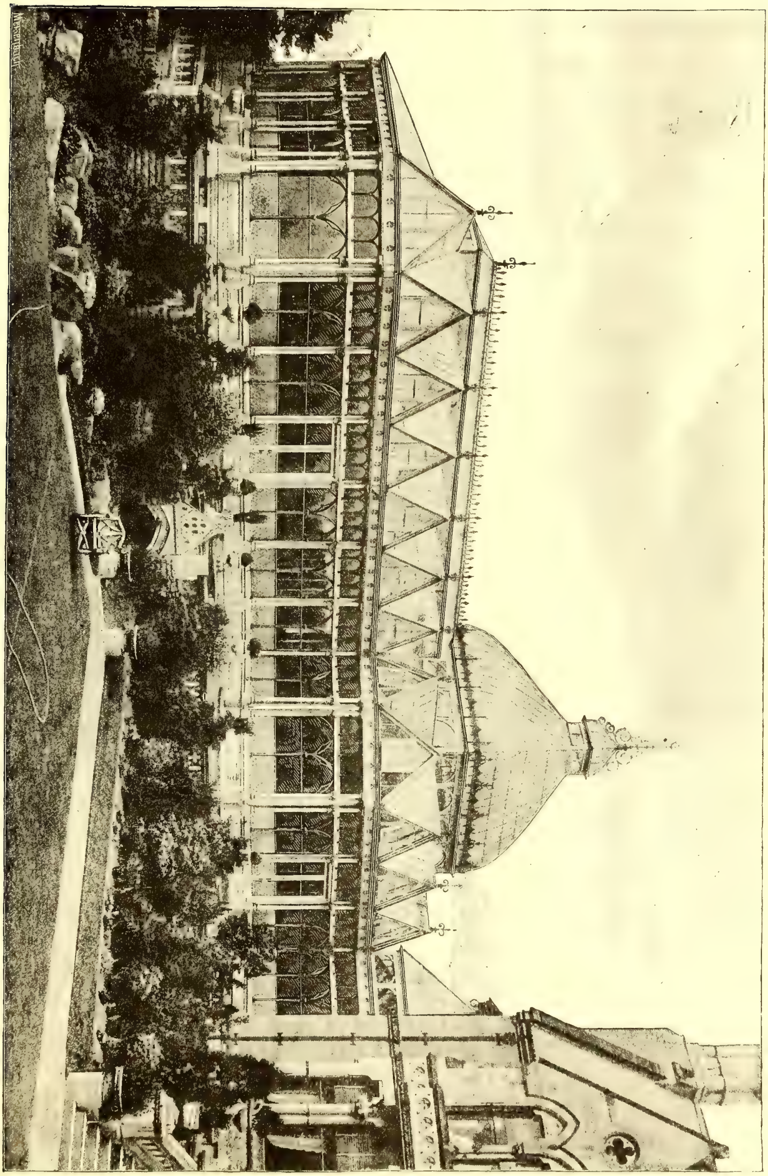

Fig. 127. Ornate Conservatory.

[Foster & Pearson.

should be kept scrupulously clean, and if rinsed down every morning ought to be dried early, or in time for the use of visitors.

The temperatures of the structures under consideration should be favourable to plants and agreeable to their owners. Extremes of heat or cold are inappropriate and best avoided. "Stove" conservatories, or those devoted exclusively to the growth and preservation of tropical plants, are among the most attractive, as far as effect goes, as these comprise many very beautiful kinds; but the heat and moisture requisite to keep them in good health prevent any lengthened stay among them. The more genial warm greenhouse temperature of 45° to 50° at night in winter and 5° higher in the day without sun heat is much more enjoyable to the great majority of people, and also suits a great variety of plants, including climbers. It is a mistake to conclude that flowers last in beauty the longest in distinctly cold houses. They are far more likely to damp and decay prematurely in a very low temperature than they are where a genial warmth and somewhat dry atmosphere are maintained, and any that have been grown in heat, or forced in any way, are the first to suffer from the change to low temperatures. There ought to be sufficient boiler power and hot-water piping to maintain a comfortable warmth in the house during cold weather without hard firing, as over-heating, by a too-restricted provision of pipes, parches the atmosphere to an injurious extent.

Glaring sunshine naturally shortens the duration of flowers and also greatly interferes with the comfort of persons frequenting a conservatory. The roof glazed with ribbed or rolled glass, and also well furnished with climbers—more especially during the summer—obviates the difficulty in that direction, but the large squares of clear glass usually employed for the fronts of conservatories should have blinds fitted to them, either inside or outside, those outside keeping down the temperature the more effectually.

ORNAMENTAL FOLIAGED PLANTS.

Every conservatory ought to have a good percentage of plants with ornamental foliage employed in its decoration. These contrast effectively with the flowering plants, and, what is of importance to many gardeners as well as owners, remain much longer, if not constantly, in a presentable condition. Some few of them that will be mentioned are also classed as flowering plants, but it is for their handsome foliage they find the most favour.

Acacia.—Young seedling plants of A. lophantha are decidedly ornamental, but when they have lost their lower leaves they present a common, unattractive appearance, and ought not to be preserved. For cultural details see Sub-Tropical Garden, page 224, Vol. I.

Agaves and Aloes.—Allusion has already been made to these succulents, and they are referred to here merely to draw attention to the fact that the larger kinds, of which Agave americana variegata may be cited as an instance, are good for conservatory and house-front decoration.

Anthericum.—For the fronts of stages and rock beds A. variegatum, synonym Phalangium argenteo-lineare, can be recommended. It is of a dwarf habit of growth, with elegant striped leaves, somewhat after the style of Pandanus Veitchi, and nearly as effective in the form of small plants. Plantlets form freely on the long flower stems, and the stock is readily increased by taking them off when strong enough and showing roots, placing them singly in small pots in a mixture of loam, leaf soil, peat and sand.

Aralia.—A. Sieboldi is the popular name for Fatsia japonica. This Japanese species, together with the variegated form, is admirably adapted for conservatory culture. It forms an upright stem with an imposing head of bold digitate leaves; height 3 feet to 5 feet; the plants are most ornamental before they lose their lower leaves. Cultural details will be found in a later chapter on Commercial Floriculture. Fatsia papyrifera is a good companion for the preceding.

Araucaria.—This family comprises several highly-ornamental species which, unfortunately, are not hardy enough for open-air culture, but are well worthy of space in most conservatories, till they lose their lower branches. A. Bidwilli, from Moreton Bay, is of symmetrical habit of growth, and in its native country attains a great height. The leaves are of a deep, shining green. A. Cooki, a tall-growing New Caledonian species, is distinct and effective, standing rough treatment well. So also does the ornamental and nearly hardy A. Cunninghami, and its glaucous form, A. C. glauca. A. excelsa, Norfolk Island Pine, is the most popular of all the Araucarias, and is effective either in 6-inch pots or when 6 feet high. It forms a series of horizontal branches, pendulous at the tips, densely furnished with bright green leaves. Araucarias are best propagated by seeds, those rooted from cuttings seldom being so perfect in form as seedlings. Sow the seeds early in the spring in pans of sandy loam, and place in a temperature of about 65°. Germination is somewhat slow. Cuttings formed of good tops of the branches inserted in nearly all sand, should be placed first in a cold frame till callused, and afterwards in gentle heat. Young plants, whether raised from seeds or cuttings, should be first placed singly in small pots and gradually shifted into larger sizes, using a sandy, loamy compost. The young plants should be grown, not far from the glass, in a warm frame or greenhouse. Later on, the beds and floors of conservatories suit them well. Large pots are not required, but abundance of water, varied occasionally by liquid manure, ought to be given when the soil is crowded with roots.

Arundo.—A. donax variegata, a reed-like plant with elegant variegated leaves, is well worthy of a place in a conservatory. It attains a height of 3 feet to 4 feet, and may be planted in the central bed. It is propagated by division in the spring, and by placing stems in water, this causing them to form small plantlets at every joint. These can be removed and established in small pots prior to planting in ordinary soil.

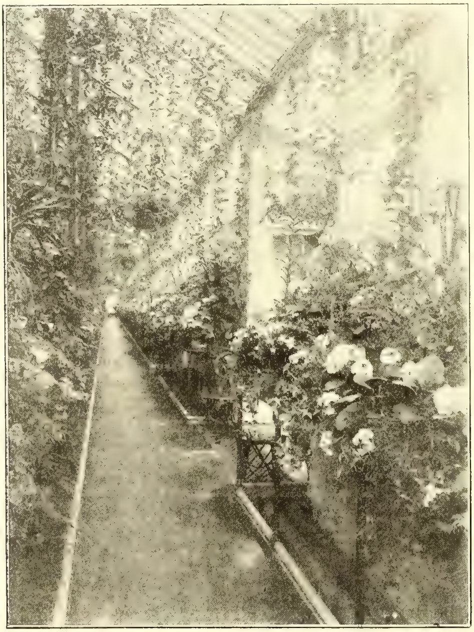

Fig. 128. A Glimpse in the Queen's Conservatory.

Aspidistra.—Of A. lurida it may be said that it owes its popularity, either as a market plant or for house and conservatory decoration, to the durable, leather-like, gas-resisting nature of its broad green leaves. A. lurida variegata, when its variegation can be preserved, is much more beautiful, and is nearly as durable as the original species. They are both readily increased by division, which is best done in March. A fairly rich, loamy soil is suitable for A. lurida, but a poorer sandier mixture is necessary for the variegated form, a rich soil tending to cause the leaves to become wholly green. Afford good drainage as a preventive of soil sourness before many roots are formed, as aspidistras require abundance of water in sweet soil. Insect pests seldom interfere with them, but the leaves repay an occasional sponging with soapy water.

Bambusa.—Bamboos, for either open-air or conservatory decoration, are deservedly gaining in popularity. They are among the most elegant fine-foliaged plants we have. B. aurea, a Chinese species, is one of the best for growing under glass. It attains a height of 6 feet or more, the long slender stems being furnished with elegant tufts of leaves of a soft green, at first deepening to yellow with age. B. Fortunei variegata (Fig. 131, page 219), Japan, has variegated leaves, borne on stems 2 feet or so high. B. nigra, synonym Phyllostachys nigra, forms long, hard, black stems, which grow to a height of 5 feet, branching near the top, and are furnished with tender green leaves. The propagation of bamboos is effected by careful division of old plants in February or March, this being when growth recommences. Place the divisions in pots just large enough to hold the roots without cramping them, a mixture of equal parts of loam and leaf soil, with sharp sand freely added, suiting either young or old plants. When well established, which soon takes place in gentle heat, the plants may either be transferred to larger pots or planted in the beds.

Beaucarnea.—One species of this family of fine-foliaged plants — B. recurvata (Fig. 133, page 222), from Mexico—is recommended for conservatory cultivation. It has slender stems, with swollen joints, furnished with long, gracefully-recurving leaves, bright green in colour. It may be propagated by seeds sown in heat during February or March. Pot in rich fibrous loam and sand.

Begonia.—For rock beds and pockets in walls constructed so as to admit of clothing them with live plants, Begonia Rex is of the greatest value, and this handsome species also succeeds admirably in pots. Many and beautiful are the varieties, and they are continually increasing. The type is too well known to need any description here, while a selection of varieties would soon be out of date. Hints upon propagation and general culture have already been given. (Page 291, Vol. II.)

Coprosma.—C. Baueriana variegata, a handsome evergreen variegated shrub from New Zealand, is good either for the margins of conservatory beds or for covering low walls. It is propagated by cuttings in March, securing these with a heel of the old wood, inserting in sandy soil, and placing in a temperature of 85° till rooted. Pot in a mixture of loam, leaf soil, and sand. Plants may be brought into good form by topping, and kept so by training or pruning.

Dracæna.—This is the popular name for those species which botanists would strictly call Cordylines. D. australis is nearly hardy, and is well adapted for greenhouse and conservatory decoration. It will attain a height of 10 feet to 16 feet, and when it commences to flower, branches freely. In its young state, or while yet the lower part of the stem is clothed, the leaves are from 2 to 3 feet long and from 2 to 4 inches broad.

Fig. 129. Mr. J. Crosfield's Conservatory.

C. a. lineata has handsome recurving leaves, prettily lined. D. indivisa (quite distinct from the Cordyline indivisa, described on page 169, Vol. II.), a New Zealand species, grows to a height of 9 feet or more, and is very effective either in a young state or when the head is borne on a long clear stem. It forms graceful leaves, green in colour, 2 to 4 feet long, and 1 to 2 inches broad. D. i. atropurpurea is of the same character, with leaves having a dark purple midrib and base. D. i. lineata has broader leaves than the type, and these are stained with reddish pink at the base. D. i. Veitchi resembles the original species with this pleasing variation—the midrib and sheathing base are deep red in colour. C. striata, from Moreton Bay, is of a more rigidly-erect habit of growth than the preceding. The leaves are 2 to 2½ feet long and upwards of 1 inch wide, green, and striated with numerous parallel nerves. C. s. congesta has broader leaves in greater numbers than in the type. All the foregoing are greenhouse species, those requiring more heat receiving attention in the chapter devoted to stove plants. (Pp. 326—329, Vol. II.)

RAISING AND INCREASING DRACÆNAS.

These dracænas, when they attain to a large size, flower profusely and seed freely. It is from seeds that the best stock of handsome plants can be most expeditiously raised. Seeds should be sown in February or March in pans or pots of sandy soil, burying 1 inch deep. Plunge the pots or pans in a brisk bottom heat, or in a temperature of 75° to 80°. The seedlings ought to be placed singly in small pots and grown in gentle heat. When growing strongly, expose them to more light and air, and before the pots become crowded with roots, move into larger sizes. They must not be crowded at any time, but should be raised on inverted pots well up to the light in an airy greenhouse. At the end of the second year they will have developed into handsome serviceable plants. The tops of greenhouse dracænas do not emit roots in heat so readily as do those of the heat-loving species, nor are they often propagated from root cuttings. If, after taking off the tops of moderately tall plants, the stems are induced to form numerous side growths in a long succession, each, when about 4 inches long, may be removed with a heel of old wood attached, and placed either singly in the centre of a small pot, or round the sides of well-drained 5-inch pots filled with peaty soil. Plunge these in a bottom-heat of 75° to 80°. Old stems of not much more than ½ inch in diameter may be cut into 1 to 2 inch lengths, inserting these to their full depth round the sides of 5-inch pots filled with peaty soil, and plunging in a brisk bottom heat. When roots have formed and top growth has commenced, pot these cutting-raised plants singly and otherwise treat similarly to seedlings. This class of dracæna are not particular as to the kind of soil they grow in, and will bear much rough usage. They should have an abundance of water, and liquid manure will benefit those long kept in the same-sized pot. For illustrations on propagation, see p. 326, Vol. II.

Eulalia.—For obviating the stiffness of some kinds of flowering plants the elegant Eulalia japonica and its varieties, E. j. foliis striatis and E. j. zebrina, are of the greatest assistance. These beautiful Japanese grasses are of easy culture, and attain a height of about 3 feet. They are propagated by division in March or April, at which time also large plants in pots may be re-potted, after having some of the stale soil shaken or picked away from the roots, thus admitting of their being returned to much the same size of pot as they formerly occupied. The larger clumps succeed best in tubs. Good ordinary soil is suitable.

Ficus.—Well-grown plants of F. elastica, and its variegated form, are of good service in conservatory decoration, especially when from 2 feet to 4 feet high, and furnished with sound lower leaves. If kept properly supplied with water and liquid manure at the roots large pots are not essential—only enough weight being required to keep the plants from toppling over and maintaining them in good health. Seeing that this ficus is most extensively grown for the markets, remarks on propagation and cultivation may, with advantage, be deferred till the chapter on Commercial Floriculture is reached.

Grevillea.—The most popular of this genus is known as G. elegans. It is of elegant growth, and in a small state is a good table plant. Propagation is effected by seed sown in light, sandy soil during February, placed in a temperature of 65° to 70°, and covered with a square of glass till germination takes place. The seedlings must be first placed singly in small pots and grown in gentle heat, giving them a small shift before they become badly root-bound. Early in the following spring the plants may be transferred to 6-inch or slightly larger pots, which will be all that need be done in the way of re-potting, as old plants, minus the lower leaves, are not of much value. A fresh stock of plants ought, therefore, to be raised every season, so as to have plenty to take the place of those no longer sufficiently ornamental.

Lomatia.—L. elegantissima and L. ferruginea are elegant green-leaved plants that should find a place in most conservatories. For cultural details see Greenhouse Plants, page 205, Vol. II.

Osmanthus.—The holly-like O. ilicifolius aureus variegatus is a comparatively slow-growing shrub, somewhat dense in habit, but is attractive in appearance. It can be propagated by cuttings of firm young shoots in sandy peat, under a hand-glass;

but good-sized bushes are much more quickly obtained by grafting on clean young privet stems.

Palms.—Without a few or many medium-sized to large palms, conservatories would present a stiff, formal appearance, altogether lacking in the coolness and boldness to be met with where good selections of these noble plants are employed. An intermediate or warm greenhouse temperature, accompanied by a moderate amount of moisture in the atmosphere, suits many of the best palms in cultivation. They would naturally make greater progress in stronger heat, but plants with longer leaf-stalks are not always the most attractive in appearance, and are not so generally serviceable as those not forced in any way. Some of the best kinds for conservatory decoration have been referred to in the chapter devoted to Palms, and cultural information there given. Similar remarks also apply to Cycadaceous plants, which are also employed in the furnishing of conservatories. (See pp. 176—183, Vol. II.)

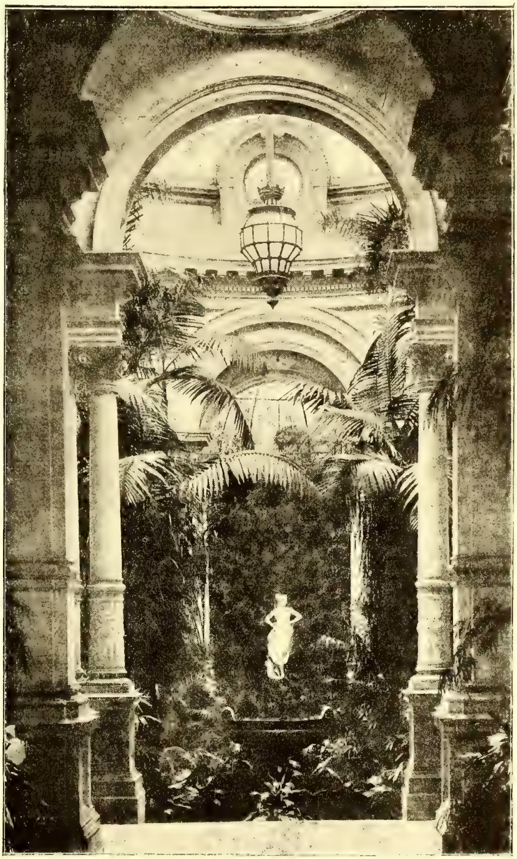

Fig. 130. Entrance to Mr. Alfred de Rothschild's Conservatory.

ORANGES AND CITRONS.

In former years, large specimen trees of oranges, lemons and citrons were considered almost indispensable for conservatory decoration, and it is a matter for regret that the fashion should have changed in favour of more quickly-grown, but less interesting, plants. Orange trees, whether in a small or large state, are, if properly grown, ornamental at all times of the year, and are particularly so when laden with ripe fruit, with, perhaps, a successional crop and a sprinkling of highly-perfumed sprays of flowers on the trees at the same time. Not only are the trees ornamental, but if the right varieties are grown the fruit they produce will be found, when ripe, very luscious and deliciously flavoured, far exceeding in quality the bulk of imported oranges, which are gathered green, ripening in their journey to this country. Citrons, lemons and limes are also amenable to conservatory culture, and are especially well adapted for clothing blank walls, including those of heated corridors, these positions not always being favourable to the growth of ordinary flowering plants.

SELECTIONS.

ORANGES.—Of the sweet orange (Citrus aurantium) there are plenty to select from, and if the uneatable varieties had in former years been passed over in favour of those with thinner rinds and pulp juicy and deliciously flavoured, one cause of waning popularity would have been removed. For growing as a standard or a large bush one of the best is the Maltese Blood. This variety bears freely, and although somewhat late in ripening and the rind moderately thick, no fault can be found with the quality of the pulp, which is red in colour. St. Michael is of a vigorous habit of growth, and an abundant bearer, whether the trees are grown in pots, tubs, or planted out. The fruit is large, and if ripened the same season as set, the rind is comparatively thin, while the quality is excellent. Silver—another of the St. Michael Oranges—is also equally well adapted for growing, either as a large standard or bush. Pernambuco.—For planting out, whether against a wall or in the border of a conservatory, this variety can be strongly recommended. When the trees are fairly large they bear freely. The fruit is large, shining, with a thin rind, and pulp firm, juicy and pleasing in flavour. Mandarin and Tangierine.—These are not so robust as the varieties already named, the wood, leaves and fruit all being smaller. They are best grown as bushes, succeeding well planted out. The fruit of Mandarin is slightly larger than that of the Tangierine.

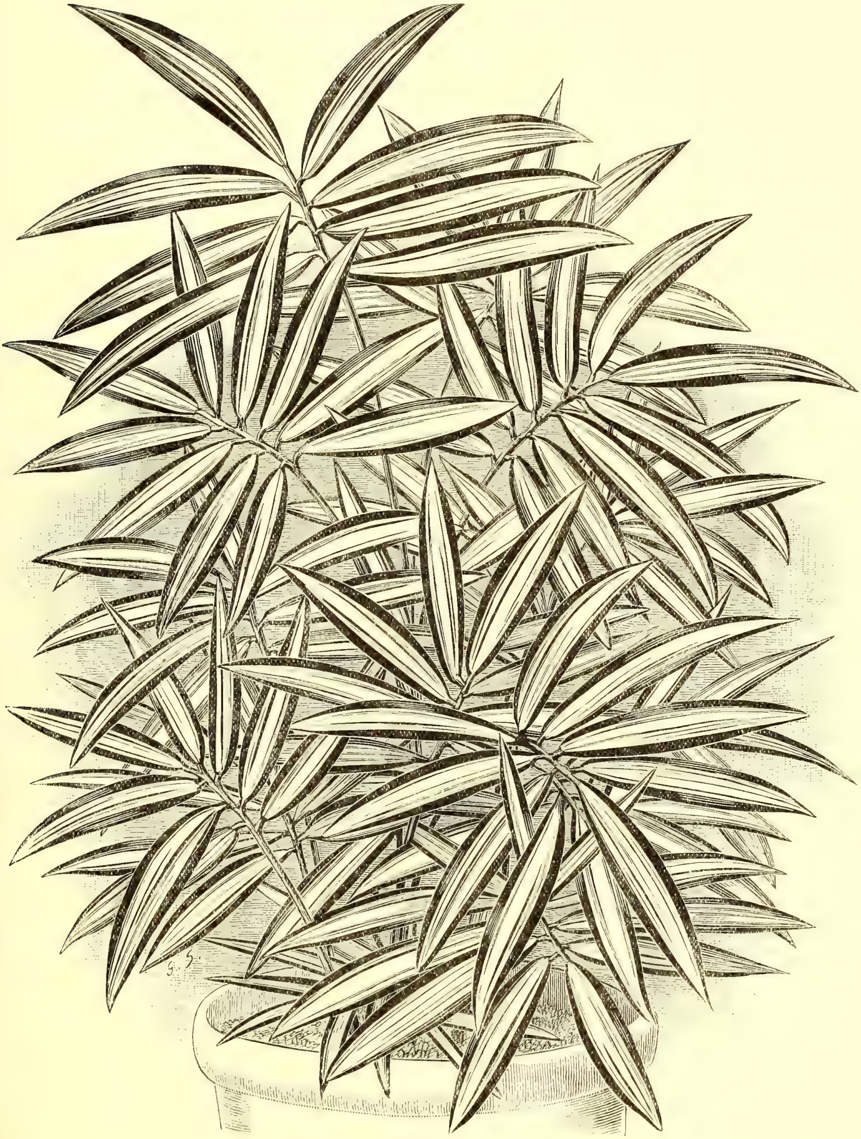

Fig. 131. Bambusa Fortunei variegata.

Both, however, are small, round and flattened. The rind is thin and tender, and the quality of the pulp delicious. Ripening takes place earlier than in the case of the larger oranges named. Kumquat, a Japanese variety, is small-fruited, dwarf-growing, and suitable for pot culture.

Citrons.—The trees of this section (Citrus medica) are strong-growing, or more so than those of oranges generally, the leaves are larger, the fruit more sparingly produced and remarkably large, sometimes attaining a length of 6 inches.

Lemons (Citrus limonum).—This species is of a vigorous habit of growth, and there are several varieties available. The common Lisbon and Genoa are two of the best.

Limes.—In habit of growth Citrus limetta resembles that of the Lemon, but the fruits are rounder. The largest fruits are produced by the varieties Imperial and Brazilian.

Shaddocks.—This strong-growing species (Citrus decuma) should be trained against a high wall, where the trees will produce a few sensational fruit, in shape and size something between a cricket and football.

Propagation and Culture.

All the forms can be increased by seeds, cuttings, grafting, and budding. Seedlings cannot be relied on to come true, and are a long time reaching fruitfulness. They form, however, the best stocks for grafting or budding. The seeds will germinate in an ordinary greenhouse temperature, large numbers having been raised in windows even, but much time will be gained by utilising a hot-bed or heat of some kind. Sow thinly, cover with ½ inch of fine sandy soil, and place a square of glass over till germination takes place. When large enough, place the plants singly in 3-inch pots and return to gentle heat, shading from sun till they are well-rooted, when they may be put into 5-inch pots. During the summer a shallow pit or frame is a good position for young plants, where they should receive plenty of air. Winter in a warm greenhouse. If bushes are desired, the seedlings ought to be large enough to bud the following August, inserting the bud in the stem in the usual way, not far from the soil. Hand-light protection is suitable for newly-grafted plants, and the stocks should not be cut down and worked till the following spring. Growth will be more rapid in gentle heat, or over a mild hot-bed, and a bush can be formed by topping and pruning.

If standards are wanted, then the seedlings should be confined to a single straight stem and grown strongly till the desired height is reached, when they may be either budded or grafted. Side-grafting or in-arching (Fig. 132) is a good method, the lower portion of the scion, *a*, being placed in a bottle raised to the height required and kept filled with water till a perfect union takes place with the stock, *b*; a slice is taken off the stem of each, the two neatly fitted together and bound with worsted; when the union is complete the ligature is removed, the top cut off the stock and the bottom off the scion, as indicated by the cross lines, and the object in view is accomplished.

July and August is the best time to insert cuttings. Branches or strong firm shoots, 9 inches or so in length, taken with a heel of older wood, are suitable for cuttings. These should be cleared of the lower leaves, firmly fixed to a depth of 4 inches in very sandy soil, and plunged in a bottom-heat of 80°, further covering with a bell or hand-glasses and heavily shading from bright sun. They will produce roots in about two months, and should first be placed separately in small pots and subsequently transferred to larger ones, as required.

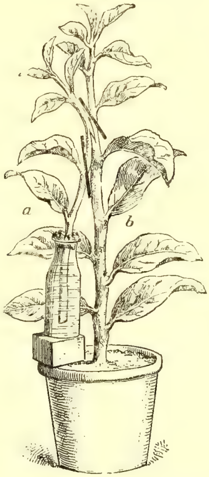

Fig. 132. In-arching seedling Orange Tree.

Layering may take place in October. Raise a pot filled with sandy soil conveniently near a two-year-old shoot, notch the latter near the middle, pegging it down at this spot in the soil, burying it about one inch. If kept properly supplied with water, a well-rooted layer ought to be ready for detaching a year later, and this must then be treated similarly to plants raised by budding or from cuttings.

The most suitable compost will consist of two parts of good fibrous loam, one part dry cow-manure passed through a fine sieve, some charcoal, crushed bones, and soft ballast, sharp sand also if the loam is devoid of grit. The loam ought not to be broken up finely for the larger shifts.

Fairly large orange bushes may be grown in pots, but standards and large trees ought to be grown either in tubs or in a border. The former are preferable, because these admit of the trees being arranged on terraces and near the fronts of houses during the summer, where they present an old-fashioned air so dear to the hearts of many people. Those trees to be trained against walls should be planted in narrow, properly-constructed borders. It is unwise to frequently disturb the roots of healthy trees; every second or

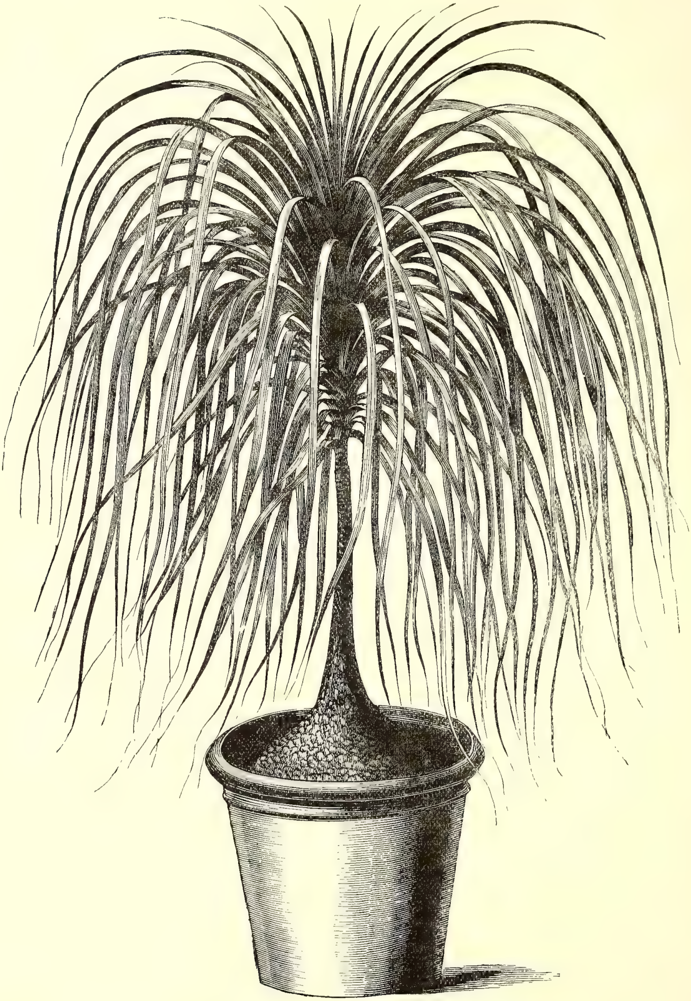

Fig. 133. Beaucarnea recurvata (page 213).

third spring is quite often enough to re-pot or re-tub. Those presenting a sickly colour, with perhaps a scarcity of leaves, are usually in a bad state at the roots. Any sour soil must be picked from the roots, have these lightly pruned, and the plants then re-potted or re-planted, taking care not to give too much root room this time. In every case afford ample drainage and make the soil moderately firm. Trees in tubs and narrow borders may be kept in a flourishing state many years by top-dressing every spring. Remove the old soil carefully down to the roots, and top-dress with compost a little richer than that recommended for potting. Never bury any portion of the stem.

Newly-planted or potted trees must be very carefully watered to avoid souring the fresh soil. When well established, they ought never to become dry, though they should be kept a little on the dry side during the winter. Always supply sufficient water to moisten the soil throughout, but on no account give water recklessly, or a wholesale loss of leaves may result. Liquid manure, weak and clear, can be given to well-rooted plants bearing fruit. During the warmer parts of the year syringe the trees daily, unless they happen to be in flower, when syringing should cease for a time.

Temperatures in conservatories cannot, as a rule, be specially regulated to suit orange and other trees, but if they could be forced so as to bring them into flower in January, February, or March, the chances are the fruit set would ripen towards the end of the same year, whereas ordinary conservatory-grown fruits do not often ripen before the second season. It is no uncommon occurrence for orange trees to be carrying ripe fruit, green fruit, and flowers all at one time, but this is a great strain on them. Some varieties are disposed to overcrop, but this ought to be prevented by timely thinning. Not much pruning is necessary. Those very young ought to be headed down freely in March, if bushes or conical trees are wanted, and further topped the same season. If the free-bearing varieties are grown, these young trees will fruit freely in 6-inch or larger pots, and prove most ornamental. They could be prepared in a forcing house. Larger trees must be pruned to form a head; afterwards shortening irregular shoots in March, and freely thinning dense heads of weakly growth will only be needed.

Orange scale, white scale, and mealy bug are the principal enemies to orange trees. The trees may be cleared of these by forcible syringing with a mixture of water heated to 120°, soft soap, and petroleum. In every three gallons of hot water dissolve a lump of soft soap about the size of a hen's egg, and then add 6 ozs. of pretroleum, measured with the aid of a medicine bottle. Every second syringeful must be returned to the can, and the mixture ought to be applied in dull weather. Sponging the leaves is a tedious process, and, if done carelessly, results in the loss of many of them, thus impairing the beauty and health of the plants.

FORCED BULBS AND CROWNS.

Without the aid of forced bulbous-rooted plants many conservatories would present a dull appearance during the first three months in the year. A moderate annual outlay on bulbs, tubers, and clumps, as the case may be, of the different kinds is necessary—very few, if any of them, forcing well two years in succession; but compared with the pleasure derived from a continuous display of beautiful and, in many instances, highly-scented flowers, the expenditure will be fully justified. The kinds mentioned below are not difficult to force. Hyacinths, narcissi and tulips of the showy order are the most extensively flowered in pots, from December to April inclusive. Chionodoxas, crocuses, freesias, gladioli, irises, liliums, oxalis, scillas, and tuberoses are the other bulbous or tuberous-rooted kinds of plants that can be forced successfully into flower. For associating with them lilies of the valley, Dielytra, Solomon's seal, and spiræas are easily forced, but these are neither bulbous nor tuberous-rooted, but the growths proceed from fleshy crowns or root-stocks.

Copyright S. & S.] Fig. 134. A pretty Corner.

Hyacinths.—For early forcing and general utility, Roman hyacinths are perhaps the most popular of all bulbous-rooted plants. Strong bulbs produce a succession of elegant, pure white spikes, compared with which the larger Dutch hyacinths are heavy in appearance. It is possible to have "Romans" in flower early in November, and by introducing a number into gentle heat at intervals, also by retarding the later bulbs, a good succession of these charming flowers may be had till the earlier forms of Dutch hyacinths, also gently forced, are fit for the conservatory. For forcing purposes, what are sold as miniature hyacinths or two-year-old bulbs are superior to larger, and because older, more expensive bulbs. A few of the earliest to flower are Baron van Tuyll, Maria Cornelia, Splendour, Blanchard, Grande Vedette, Gertrude, Princess Beatrice (one of the best for forcing), General Pelissier, William I., Homerus, Norma, La Peyrouse, La Tour d'Auvergne, and Ida.

The first care of the cultivator should be to secure bulbs early and to have them well rooted before forcing is attempted. If they do not crowd the pots with roots only feeble flower spikes need be expected from forced bulbs. With a view to having a long succession of flowers some cultivators divide their stock of bulbs, potting a portion soon after they are received, and others six weeks or so later. Should the potting be deferred a little too long, top-growth having commenced before it is done, there will be no satisfactory recovery from the bad start thus made, and no fine flowers obtained. Better, by far, retard the bulbs in the pots or boxes they are established in, than to run any risks. These remarks apply to the potting of bulbs generally.

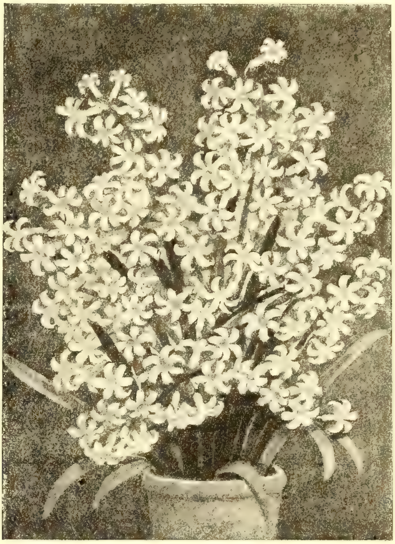
Fig. 135. Roman Hyacinths.

Good ordinary soil is suitable for hyacinths and bulbs of all kinds, and if the base of each rests on sand this is supposed to favour root-production. All things considered the 5-inch pot is the best size for both Roman and miniature hyacinths, three or more bulbs, according to size, going into each pot. Drain the pots, fill with soil (not too loosely), and in this make a cavity for the reception of the bulbs, burying them so that only the neck just shows through the soil. Next arrange the pots on a bed of ashes in the open, or if the locality is a wet one, in cold frames. With the soil sufficiently moist when used no water will be needed;

otherwise, apply sufficient to moisten the soil to the base, and an hour or so later well cover with cocoanut-fibre refuse or sweet coal-ashes. Unless so covered, top-growth may commence too soon, and some of the bulbs be lifted nearly out of the soil by the force of the roots; the covering, therefore, answers the twofold purpose of keeping the soil cool and uniformly moist, and also acting as a weight for keeping the bulbs in position. A period of about two months ought to be allowed for the bulbs to become well established, but it may be necessary to move some of them out of the ashes in less time, before the top-growth becomes blanched, elongated, and, perhaps, partially unfolded. Hard forcing should be avoided, gentle heat of about 60° sufficing. In this the plants may be had in flower in about a month, the later bulbs, which may be introduced at intervals of ten days or so, requiring less time. Assist with weak liquid manure and lightly stake the flower spikes before they have a chance to become crooked. The Dutch varieties will not force so quickly as the "Romans," and are liable to become drawn, especially if not grown in a very light position. See also p. 46 *et seq.*, Vol. II.

Narcissi.—Since it has become known that several species and varieties of narcissus are amenable to moderately brisk forcing, this has greatly increased the demand for bulbs. The old Paper White is nearly superseded by a greatly improved variety, sometimes catalogued as Early Snowflake, and known among market growers as Paper White grandiflorus. This forces readily, and can be had in bloom at much the same time as Roman hyacinths. Early Double Roman, another member of the Polyanthus section, also forces readily, but is not so early as the variety first mentioned. Grand Monarque, Gloriosa, Her Majesty (Fig. 136), Queen of the Netherlands, and Soleil d'Or must not be forced early.

Daffodils.—This is the popular name for large trumpet-flowered varieties, both single and double, which are more extensively forced than formerly. One of the best for the purpose is the rich yellow Trumpet Major, the rather more expensive and equally fine Golden Spur forming a good succession. Princeps is paler in colour and later than the preceding, but the flowers are large and fairly durable. It is possible to have Trumpet Major in flower late in December, and a good display during the first week in January. In February, Golden Spur and Princeps should be available. The double-flowering section comprises a few forcing varieties, notably Telamonius plenus (Von Sion), Orange Phœnix (Eggs and Bacon), and Sulphur Phœnix (Butter and Eggs). Von Sion stands moderately hard forcing, and may be had nearly as early as Trumpet Major, for which it is a good double companion.

Narcissus and daffodil bulbs intended for forcing ought to be procured early, or say, not later than September, and at once potted. For cutting purposes they may be flowered in boxes, but for conservatory decoration pots are preferable, three bulbs going to each 6-inch pot. Insert and treat exactly as advised for hyacinths. From the ashes move them, before the top-growth has made much progress, to frames, introducing them to gentle heat as required. They make slower progress than do Roman hyacinths, and must not be hurried at first. A temperature of 55° to 60° is sufficient till the flower-bud has cleared the neck of the bulb, after which another 5° may be given. Weak liquid manure has a good effect, but the greatest care must be taken not to over-water, as this may lead to many flower-buds failing to expand.

Of the small trumpet-flowered Narcissi the only two recommended for forcing are Burbidgei and Poeticus ornatus, both belonging to the popular Pheasant's Eye section. There is very little difference in point of earliness, but the flowers of Poeticus ornatus are somewhat superior. Neither of them ought to be started very early or be subjected to high temperatures. Introduced to gentle heat early in December, the first flowers may be had during the first week in February.

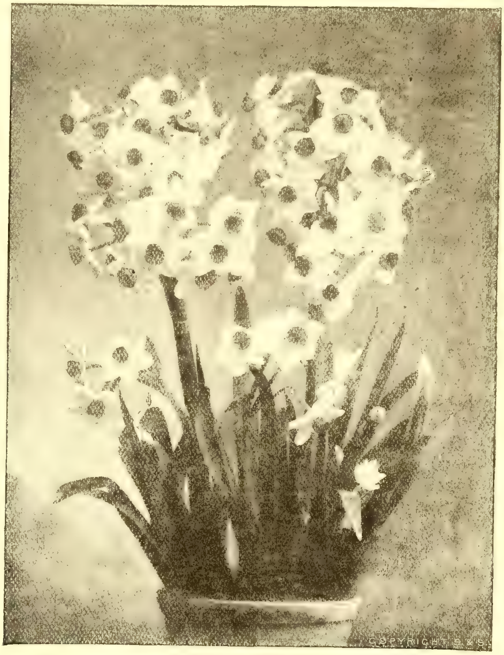

Fig. 136. Polyanthus Narcissus, Her Majesty.

Bulbs of those varieties are small and the growth is somewhat spindly. Five to eight bulbs may be placed in a 6-inch pot, and in all respects treated similarly to the larger Trumpet section. Never keep the bulbs out of pots or boxes, whichever may be used, long after they are received. After flowering, store in frames and give water judiciously till the tops die down, when the bulbs may be removed from the soil and at once planted in the open ground. Many of them will flower the following season, and if desirable can be flowered in pots again a year later. If they are taken up for this purpose, this should be done in July, the smaller, or side bulbs, divided from the flowering size and planted in nursery beds.

TULIPS.—These are particularly showy. With a good selection of varieties a display can be continued from mid-winter to Easter. For flowering early the Duc Van Thol varieties, of which there are a considerable number, are the best, as they endure sharp forcing. These may be succeeded by La Reine; White, Red and Yellow Pottebakkers; Yellow Prince, Duchesse de Parma, Thomas Moore, L'Immaculée, Vermilion Brilliant, and Cottage Maid—arranged somewhat in the order named. The foregoing are all single-flowering, and the only doubles recommended for forcing are Tournesol, Murillo, Imperator rubrorum, Salvator Rosa, and Rose Blanche.

Tulips for forcing ought to be potted as early as possible. Three bulbs may be placed in a 5-inch pot or six in the 6-inch size, pressing them into the soil so as to leave the tops just showing. Place on ashes, and cover as advised for hyacinths. If the Van Thol varieties are introduced into a temperature of 65° to 70° late in November, they can be had in flower in a month. The other varieties are slower in opening, but La Reine will stand rather hard forcing; the Pottebakkers also succeed in a temperature ranging from 60° to 70°. Some early tulips are apt to be too short in the stem, a drawback that may be remedied by forcing in frames or boxes, and shading rather heavily till the flowers are nearly developed.

LILY OF THE VALLEY.—Though, as previously said, neither bulbous nor tuberous-rooted, these flowers are forced in the same way and for the same purpose. Very little need be said in praise of lilies of the valley. They are deservedly popular with almost everyone. Nor are they so difficult to force as was at one time thought. There are a few conditions, however, to be observed by all who would be successful with them. In the first place only the German crowns or clumps are, because of their early maturation, amenable to hard forcing, the Dutch importations proving of good service for the later displays. Another condition is that the crowns be kept as cool as possible till forcing commences, and if they can be subjected to frost so much the better. They will not start in gentle heat, and if the attempt is made to forward them in a temperature say of 55° to 65°, the chances are they will refuse to move. Very high temperatures are absolutely necessary, more especially in the form of bottom heat. This remark does not apply to retarded crowns, as these start best in gentle heat, and employing them obviates the necessity for very early forcing. By "retarded" crowns is meant those which are kept in refrigerators, thus enabling lilies of the valley to be had all the year round.

If on receiving the stock of clumps and crowns (and it should be added, single crowns are quite as likely to do well as clumps, and in some respects are preferable), they cannot be placed in pots or boxes at once, they should be stored in soil or sand, keeping them cool and moist till they can be attended to. Clumps have to be placed in pots large enough to hold them, while crowns can be packed from 1 inch to 2 inches apart, in either 5-inch or larger pots, with the pips about half-buried. If forced in boxes they can be made up into pots after they are in flower, as they form no fresh roots, and do not flag after moving. Forcing may take place either immediately over hot-water pipes or a hot-bed, a bottom heat of 90° to 100° not being too great. If kept close, heavily shaded, and moist at the roots, they ought to be sufficiently advanced in growth to move to a light position in about three weeks, but should not be placed in a conservatory till the flower spikes are well developed.

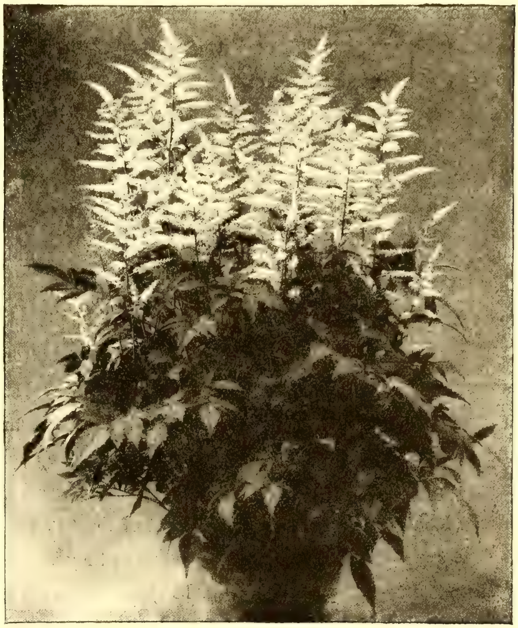

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Fig. 137. Spiræa astilboides floribunda.

Spiræa.—Immense numbers of Spiræa (or Astilbe) japonica are annually forced, and well-grown plants are of the greatest assistance to the decorator. They can be had in flower early in February, and onwards for three months with a sufficiency of strong crowns. It is possible to prepare good clumps for forcing in private gardens, but owing to the injury often sustained by the young growths on plants in the open, the attempt is not often made. Imported clumps are cheap and rarely fail to afford a profusion of strong plume-like spikes, together with abundance of good foliage. The old S. japonica is, to a certain extent, being superseded by other species and varieties. The compact form, S. j. compacta multiflora, has delicate foliage, and for this reason has not become so popular as first anticipated. S. astilboides does not force quite so readily as the dwarfer form, S. a. floribunda (Fig. 137), the best of all for flowering in February, but both are strong and particularly well adapted for conservatory decoration. S. palmata, a tall-growing species, with crimson feathery flowers, can also be gently forced successfully, and its colour is appreciated.

Spiræa clumps may be divided, if plants are required to flower in small pots. Some of the smaller portions may go into 5-inch pots, the bulk into 6-inch, and any extra large clumps into 7-inch pots. A little good fine soil should be packed firmly round them, this serving to prevent the water from escaping too readily, and is something for the roots to feed on. The first for flowering may be placed in a temperature of 60° to 65° in December, and would start quicker if given a bottom heat of 75°, introducing more every three weeks or so. A covering of moss or leaf soil should be placed on the crowns, and the soil in the pots be kept uniformly moist. When growing strongly, abundance of water and liquid manure ought to be applied to the roots, two applications in a day often being required in bright, warm weather. Allow sufficient room for the foliage to develop and for a fair amount of light to reach the plants. They must have copious supplies of water while in flower, or they will not long remain ornamental.

DIELYTRA.—D. spectabilis (Fig. 138) has long been a favourite plant for conservatory decoration, but it should not be forced either very early or rapidly, as this causes the flower stems to be weakly and the flowers flimsy and poor. Strong clumps can either be prepared in the reserve garden or imported, and these should be placed in pots just large enough to hold them, with good soil pressed firmly. February is a good month to start them in gentle heat. Support the stems with neat stakes, and, when growing strongly, supply abundance of water.

SOLOMON'S SEAL (Polygonatum).—This old-fashioned herbaceous plant is an excellent companion for dielytra, and well worthy of cultivation under glass. P. multiflorum is the best for forcing, the stronger-growing P. macrophyllum also finding favour, while the neat-growing P. verticillatum should not be overlooked. Either pot good home-grown clumps or purchase importations, treating them as advised for dielytras, though staking is seldom unnecessary.

Some of the bulbous or tuberous-rooted plants next to be treated upon, may be thought by some persons to be of even greater importance than the plants given precedence. It is a question of taste, and they will be taken in alphabetical order for convenience only.

Chionodoxa. — The beautiful C. Luciliæ, in three forms, blue, rose and white, is a desirable forcing plant, and can be had in bloom quite early in the winter. Home-grown bulbs should be preferred; these, as a rule, producing finer spikes than do those imported. Pot early, placing from five to seven bulbs in a 5-inch pot, and treat similarly to Roman hyacinths.

Crocuses. — Although showy and easy to flower, crocuses are not grown in pots nearly so much as formerly, probably owing to the flowers not finding favour in a cut state. There are numerous varieties available, and among the best for flowering early in pots are Albion, Cloth of Silver, Golden Yellow, and King of the Blues. The corms keep well in a dry, cool state, and may therefore be potted at intervals of a fortnight, from October to the end of the year. Place about five corms in each 5-inch pot, and treat similarly to hyacinths. Gentle forcing must be the rule with these bright and cheerful flowers.

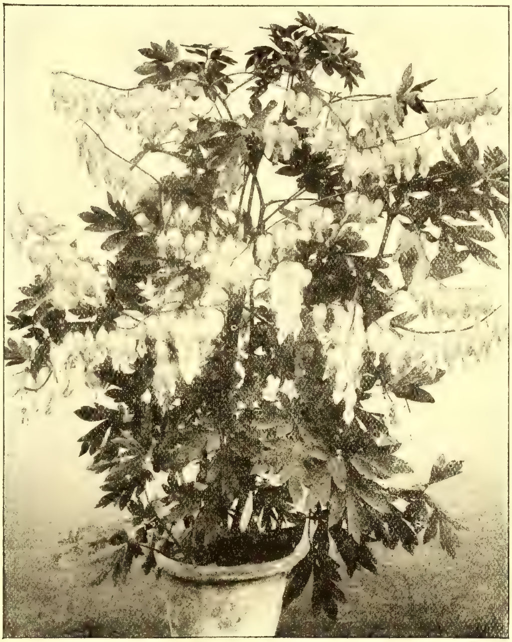

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Fig. 138. Dielytra spectabilis (Bleeding Heart). *From a photograph.*

Freesias.—These are among the most elegant and acceptable of all bulbous-rooted plants. They can be had in flower throughout the first three or four months in the year without resorting to hard forcing. The flowers are distinctly beautiful, whether on the plants or in a cut state. Amateurs are particularly advised to pay more attention to this pleasing class of plants, as they lend themselves readily to their methods of culture. The only conveniences required are a frame, or frames, and a greenhouse from which frost is excluded. The species principally grown is F. refracta, from the Cape of Good Hope. This produces strong branching spikes of tubular flowers, white, with orange throat. F. r. alba is a charming pure white form, while F. Leichtlini, though classed as a distinct species, only differs slightly from F. refracta, but F. L. major (Fig. 139) is highly worthy of cultivation.

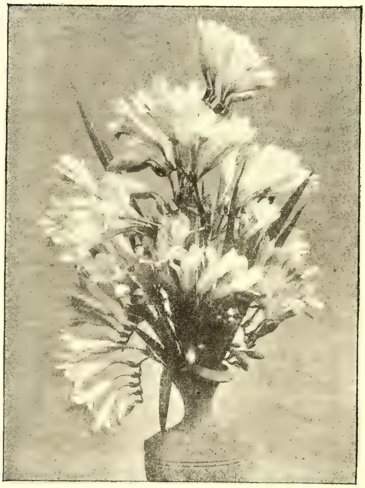

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Fig. 139. Freesia Leichtlinii Major (Sutton's).

Freesias are easily increased by sowing seed in August, or as soon as ripe; or it may be sown in March, but in this case few of the plants will flower the following winter. Seedlings cannot be transplanted, and the seed ought, therefore, to be sown in pots or pans in which the plants and bulbs can remain undisturbed for two seasons. The pots usually employed are 4½-inch and 5-inch sizes. Drain these well, and fill moderately firm with a mixture of equal parts of light loam and leaf soil, with a little decayed manure and plenty of sand. Sow thinly and cover with one-eighth inch of fine soil. Arrange the pots in a cool, close frame, keep the soil moist, and shade heavily till the seedlings appear, afterwards gradually exposing them to the light and air. Thin out the seedlings to about six in each pot. They must not be exposed to strong currents of cold air, nor on the other hand unduly coddled. The best places for them during the winter are the light shelves, particularly those suspended near the glass, in greenhouses, where, if they are well attended to, some of the strongest will flower in March. After the flowering period, gradually withhold water from the plants, and when the tops die down store, without disturbing the bulbs, in a cool dry place. In August give a portion or all of the stock a good watering, and start the bulbs into growth in a cool frame, or other sheltered position. They may be kept in frames till November, but care must be taken not to overwater, as too much moisture at the roots is a frequent cause of the leaves turning yellow. If the plants are housed in November and given the attention they merit, all will flower profusely in the late winter and early spring months. Freesias may also be increased by offsets at potting time, treating these similarly to one-year-old seedlings.

Old bulbs, whether home-raised or purchased, are also best flowered in 5-inch or slightly smaller pots, and, if re-potted and started into growth at intervals from August to October, a long succession of flowers should result, lasting, say, from January to April. They ought to be graded with a view to having uniform growth, placing about four of the largest and five or six of the medium-sized to small bulbs in a 5-inch pot. Use compost similar to that recommended for the seed pots, and cover the bulbs with an inch of soil. Arrange the pots in a cold frame, give enough water through a rose to just moisten the soil, and cover with either ashes or cocoanut fibre refuse, removing this soon after top-growth commences. For the first three or four weeks give water sparingly, but when the soil is well occupied by roots, they must have it more freely. No shifting into larger pots should be attempted. Keep the plants upright by means of light hazel stakes and strips of raffia, avoiding all stiffness. Those to flower early should have the benefit of gentle heat and a light position, but they must not be submitted to temperatures higher than 55°. Assist with weak liquid manure. Later plants may be similarly treated, and all should be dried off after flowering and rested in cold frames, re-potting in the autumn.

GLADIOLI.—The value of gladioli for conservatory decoration is, as yet, scarcely appreciated. Not only can they be had early with a very little forcing, but the flowers are more perfect under glass than in the open, and their beautiful spikes interspersed among a variety of other plants are seen to great advantage in conservatories. The most popular for pot culture is G. Colvillei albus (The Bride), but Adonis, Delicatissima, Duke of Albany, Fairy Queen, Mary Anderson, Princess of Wales, Queen Victoria, and Sutton's Queen of Pinks (Fig. 140), are all suitable for flowering early in pots. Gladioli generally may be grown under glass for an early summer display. The potting should take place late in December. The Colvillei type have small corms, and six or more of these may be placed in each 6-inch pot, but the stronger sorts should be grown singly either in 5-inch or 6-inch pots. Use rather rich loamy soil, surrounding the corms with sand and just covering them with soil. Arrange the pots under a dry stage, in gentle heat of 45° to 50°, introducing them to a lighter position and a temperature of 60° to 70° after roots have formed and top-growth has commenced. Assist with liquid manure. In this way many of them could be had in full beauty at Easter.

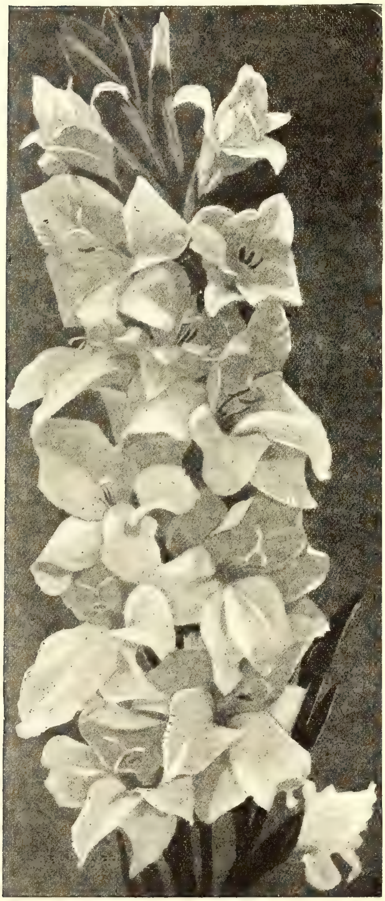

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Fig. 140. Gladiolus, Queen of Pinks.

Irises. — Spanish Irises may be flowered in pots, but they do not force well. In a warm greenhouse and light position they may be had in flower at an acceptable time, and they are very beautiful, when thus grown, three weeks to a month earlier than they would expand in the open. Three bulbs to a 5-inch pot and five in a 6-inch are ample. Store them in cold frames during the early part of the winter, and introduce to gentle heat when growth commences.

Liliums.—Very few of the liliums are amenable to forcing. L. Harrisi (the Bermuda Lily) is perhaps the most popular, but L. longiflorum, L. candidum and L. lancifolium album are also extensively forced, more particularly by market growers, and the methods adopted by experts will be duly given under the heading "Commercial Floriculture."

Oxalis.—Not many of these remarkably free-flowering and by no means insignificant plants are grown, but they ought to meet with more favour. Some of the best, either for pots or hanging baskets, are Bowei, rubella, versi-color, and Sutton's Golden Cup. One large bulb is enough for a 5-inch, or three smaller may be placed in a 6-inch pot. A sandy compost should be employed. Pot in October for early flowering, and more at intervals of three weeks or a month. Place in a frame or pit, and keep the soil steadily moist. When well rooted they may be subjected to a temperature of 50° to 60°, and moved to the conservatory when the first flowers are unfolding. After flowering gradually withhold water, and when the leaves drop, keep the soil in a dry state till the time arrives for re-potting the bulbs.

Scilla.—The early-flowering S. sibirica and its white form, also S. bifolia and S. b. alba, force readily, and are charming plants for the conservatory. Treat similarly to Roman hyacinths.

Tuberose.—This is a class of tuberous-rooted plants dear to market growers and their customers, and when the cultural treatment comes to be given in a subsequent chapter, it will be found that many private gardeners may produce a supply of these deliciously fragrant flowers more easily than they have hitherto imagined. The illustrations in this chapter have been obligingly furnished by Messrs. Sutton & Sons, Reading.

FORCED SHRUBS.

Where a conservatory has to be kept gay during the winter and spring months recourse must almost of necessity be had to forcing flowering shrubs in variety. Chrysanthemums carry on the display till quite late in January, and it is after these are over that the forced plants and shrubs are most required. Maintaining a supply of such flowers entails a considerable amount of labour and expense, and an annual outlay on a new stock is, in most instances, practically imperative. The same shrubs will not often flower satisfactorily two years in succession, and in some cases they may require to be rested two clear seasons, so that a fairly large stock is needed by those who force them extensively. They are usually bought, and are, or ought to be, well furnished with flower buds or flowering wood when received. The deciduous shrubs, such as Hydrangea paniculata, lilacs, prunuses, weigelias and viburnums are largely imported and arrive with but little soil about the roots. These ought to be potted directly they come to hand. First, however, if the roots are very dry and the wood affords signs of shrivelling, immerse them in a tub or tank of water the best part of a day, this plumping the wood and roots considerably. Place them in pots just large enough to hold the roots without unduly cramping, and pack good soil firmly about them. For the majority of shrubs, a mixture of two parts loam to one each of leaf soil and fine decayed manure, with a sprinkling of sand, is suitable.

The evergreen kinds, including andromedas, kalmias and rhododendrons, are grown in a peaty medium and lifted with a mass of fibrous roots and soil attached. If they are very dry at the roots on arrival, they ought to be at once soaked in a tub of water, as it is almost impossible to properly moisten them after potting has taken place without unduly saturating the new soil. After the water has had time to drain away from the roots the potting should be done. Place the shrubs in pots large enough to admit of a mixture of equal parts loam, peat, leaf soil, and sand being packed closely and somewhat solidly about the roots. Allow room, or the full depth of the rim of pot, for watering purposes, as it is a difficult matter to keep forced shrubs properly moist at the roots if the pots are filled too full of soil. After potting arrange them on a bed of ashes in a position sheltered from strong cold winds, and give a good watering. Protect the pots with strawy litter for the prevention of cracking; but the shrubs will be benefited rather than otherwise by exposure to frost, as they invariably force more readily after the complete rest thus produced.

Those deciduous shrubs which have been planted out for not less than two years ought to be taken up directly the leaves have fallen, and the evergreens may be lifted at the same time. If they have been transplanted each year, either in the autumn or spring, they will be furnished with abundance of fibrous roots, and only a little further reducing may safely be done when preparing them for pots. Large pots, owing to the labour of moving and the difficulty of obscuring them when the conservatory is reached, ought to be dispensed with as much as possible, but too many roots should not be sacrificed, or a severe check may be given, and the shrubs will not flower so well or the bloom last so long as is desirable. After potting treat similarly to the importations.

Moving the shrubs straight from the open ground to strong heat is the way to bring about partial failure. If they flower under this haphazard treatment, the duration of the bloom is certain to be so short as not to repay for the trouble taken to produce it. Now that we, as before suggested, have a good selection of late chrysanthemums available, there is less reason for commencing forcing shrubs so early as of old, and instead of placing some in heat in September, December ought to be early enough to start forcing, following with others about every three weeks. All kinds of deciduous and other rested shrubs burst into growth and flower the more freely if given the benefit of genial bottom heat and a moist atmosphere. Hot-beds of leaves, or leaves and manure, such as are formed in many vineries where early forcing is carried out, are valuable to those who force shrubs, and a newly-started vinery with the old-fashioned central pit is a capital place for them. Failing this, a span-roofed house with a good central bed ought to be set apart for the purpose, though a few shrubs can be forced in a variety of other places. Commence with bottom heat of 75° to 85°, and a house temperature of 50° to 55° increasing gradually to 60° to 65°. Syringe the plants daily with tepid water after sunrise and again at midday, damping the walls, wood-work, and floors at the same time, to create the moist atmosphere previously recommended. When the plants are moved to the conservatory, which should be done during the warmest part of mild days, they must still be kept well supplied with water at the roots. From the conservatory they ought, when no longer presentable, to be transferred to a cool house to harden prior to planting out. A few additional cultural details will be given when each kind of plant is commented on separately.

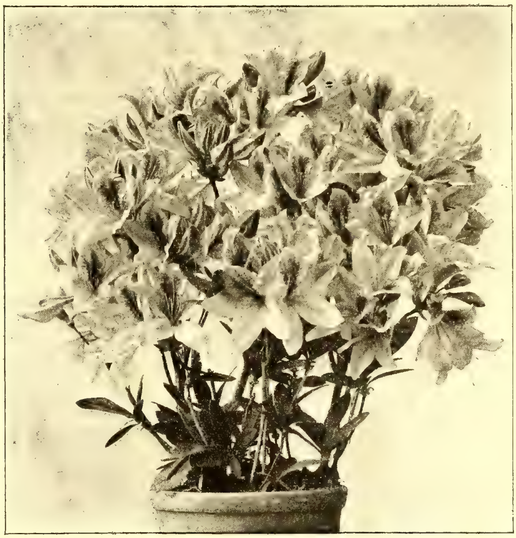

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Fig. 141. Azalea mollis.

Andromedas. — These dwarf evergreen shrubs force admirably, but must not be subjected to high temperatures. Under glass the heath-like flowers are even more attractive than in the open. The species recommended are A. floribunda and A. speciosa. These should have peaty soil, and after forcing and hardening be planted out in more of the same kind.

Azaleas.—Several Indian azaleas (p. 152, Vol. II.) force well, and can be had in flower at midwinter if desired. The double white Deutsche Perle is of a most accommodating nature, as it can be had in bloom early and late. The old single Fielder's White, and the amœna grandiflora varieties force readily. The deciduous Ghent azaleas are largely and easily forced, and these, with the mollis section (Fig. 141) and hybrids from it, are justly popular; they afford a great variety of colour, orange and rose-red shades predominating. Dwarf imported plants, beautifully set with flower buds, are obtained at comparatively low prices, and require a peaty soil. After they have flowered, harden and plant out in nursery beds in a mixture of loam, peat and leaf soil. In the course of two years they may again become well furnished with flower buds, but are rarely so good again as when first imported.

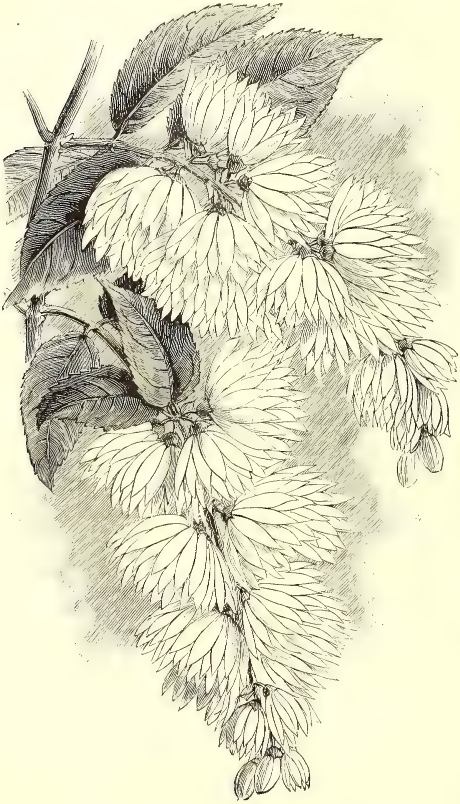

Fig. 142. Deutzia candidissima flore pleno.

Cerasus.—The double-flowering cherry, Cerasus caproniana multiplex, is good for pot culture, and forces readily. After flowering regulate the growths by pruning, and plant out in ordinary garden soil.

Daphne. — The garland flower, Daphne cneorum, is well worthy of being potted and forced, a few of its sweet-scented flowers perfuming a conservatory. It succeeds best planted out in peaty soil, but is not very fastidious in that respect.

Deutzia.—In addition to the well-known D. gracilis, the double-flowering D. scabra, synonym D. crenata flore pleno, and D. candidissima flore pleno (Fig. 142), may also be forced for conservatory decoration. Gentle forcing answers best, as when they expand in a strong heat the flowers shatter very quickly. Cut back after flowering, and the slender D. gracilis should complete its growth in partial shade and gentle heat. If kept in pots the old balls of soil and roots ought to be reduced and returned to fresh loamy soil, doing this just when they commence growing after being pruned. Plant out D. scabra in ordinary garden soil.

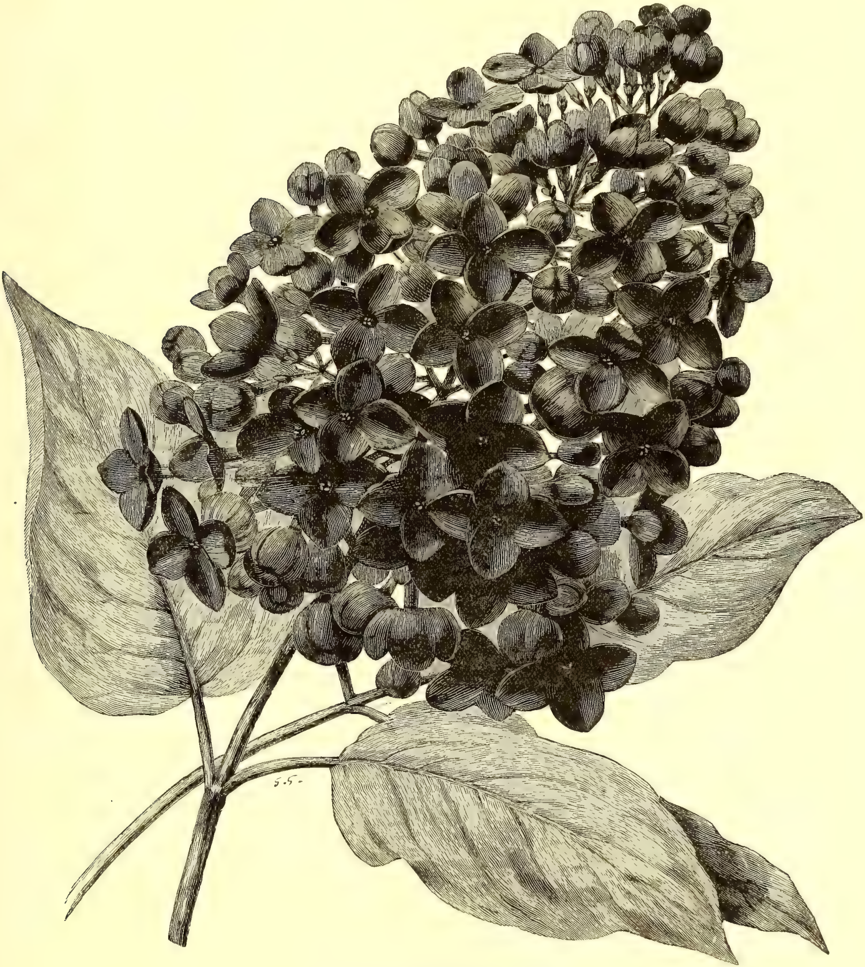

Fig. 143. Lilac Souvenir de Louis Späth.

Hydrangea.—There are few more showy or serviceable conservatory plants than H. hortensis and its blue-flowered variety H. h. japonica. As this is also extensively cultivated for the markets, cultural instructions will be duly given when the market growers' chapter is reached. H. paniculata grandiflora is very different in character, and the bulk of the plants forced are prepared on the Continent. The long shoots received with each plant, as well as those on those home-grown, ought to be cut back to within three inches or so of the older wood before forcing commences, and the strong resulting shoots will each give a terminal spike of white flowers. After flowering harden and plant out, deferring the pruning till the following spring, when it should be done as just advised. Ordinary soil.

Kalmia.—There are few handsomer evergreen shrubs than K. glauca and K. latifolia. The last-named is the best known, and fully deserves its popularity. Kalmias are peat-loving and fibrous-rooted, succeeding well under the same treatment that rhododendrons thrive upon.

Lilac.—For forcing purposes no class of hardy deciduous shrubs are so much grown as these. The Persian species, Syringa persica, is the freest-flowering, but the flowers are not equal to those of S. chinensis, while the common lilac, Syringa vulgaris and its varieties, are still finer. Flowers are produced by large globose buds which are easily distinguished from the more conical wood-buds, and only bushes well furnished with the former should be lifted. They force easily enough, but the best for the purpose are Charles X., Marie Legraye and the very dark Souvenir de Louis Späth (Fig. 143), all varieties of the common lilac. If pure white flowers are desired, and they are the most valuable in a cut state, force strong bushes of Charles X. in a mushroom house or in a structure kept constantly dark, moist, and at a temperature of 55° to 60°. After flowering, harden; prune somewhat severely, and plant out in ordinary garden soil.

Philadelphus.—Although not often seen flowering in pots, there is no good reason why P. coronarius and the larger-flowering P. grandiflorus should not be forced for conservatory decoration. The only objection urged against them is the strong scent the flowers emit, this proving too much for some people. Treat similarly to lilacs.

Prunus.—No deciduous shrub forces more readily than the double-flowering Chinese plum—Prunus sinensis flore pleno—and for this pure white variety the semi-double pink species, P. triloba, is a good companion. Both are very beautiful. In common with Deutzia gracilis these plants can easily be raised from cuttings of firm young wood as early in the season as they can be procured, striking them in a close-heated frame. Top

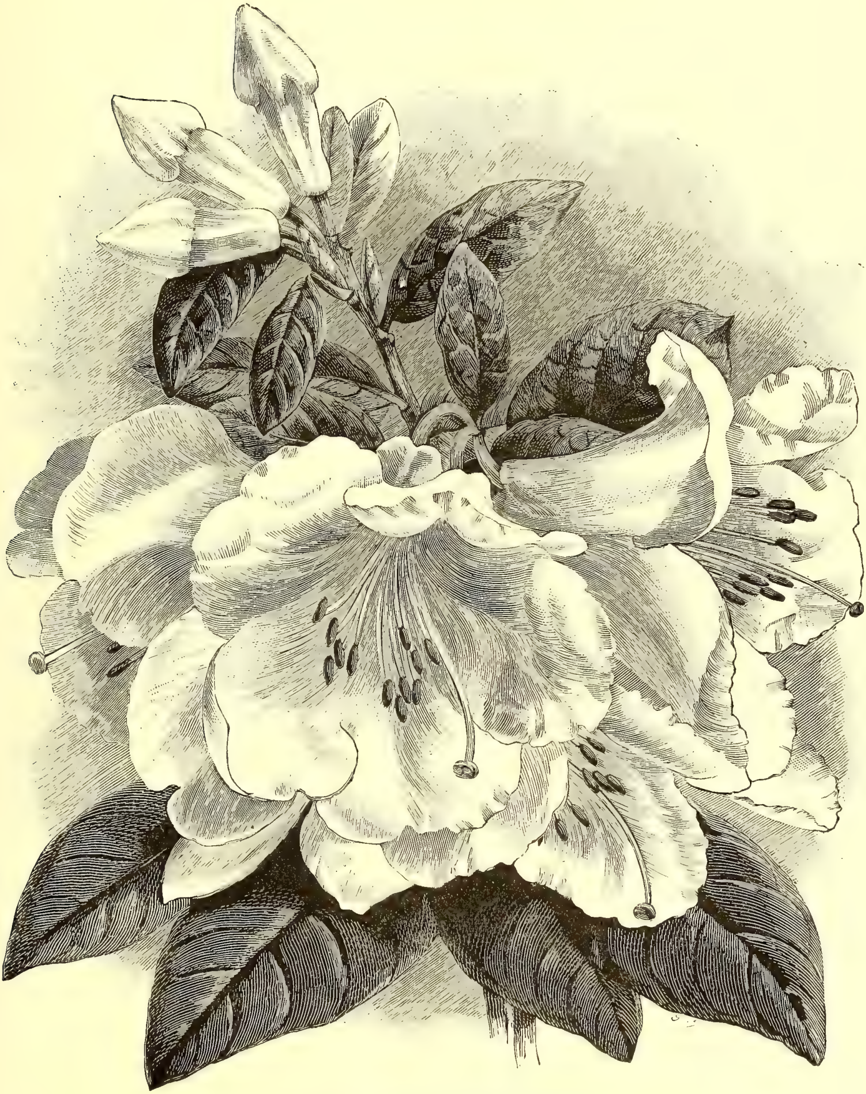

Fig. 144. Rhododendron fragrantissimum.

to form bushy plants, and each spring re-pot, using a loamy compost. Prune after flowering, and during the summer stand the plants in the full sun, plunging the pots in ashes.

RHODODENDRON.—Some of the choicer semi-hardy rhododendrons are well worthy of a permanent place in a large conservatory, and these planted in nearly all peat would develop into grand flowering specimens. Among those recommended for this purpose may be mentioned, R. arboreum, R. Aucklandi, R. Edgeworthi, and R. Nuttalli. R. fragrantissimum (Fig. 144) is both beautiful and sweet. Most of the hybrid varieties, of which there are many available, may be forced, and large numbers of sturdy bushes bristling with flower-buds are annually imported for that purpose. After flowering, all the seed pods should be removed and the bushes kept in a cool house till May, when they ought to be planted out in peat, good leaf soil, and a little loam in which there is no lime. The soil should be packed firmly about the roots and never allowed to become dry, excessive dryness entailing the loss of plants. A mulching of leaf soil would save the watering-pot somewhat. Not many of the bushes will have sufficient flower-buds on them to pay for lifting the same year as planted out, but they should flower freely a season later.

RIBES.—Flowering currants (Ribes sanguineum and varieties) are not often forced, owing, probably, to the short time in which the flowers keep fresh. Well-prepared bushes force readily and flower profusely. After removal from the conservatory, forced bushes ought to be hardened, lightly pruned, and planted out in ordinary garden soil.

ROBINIA.—Of this family of hardy shrubs the Rose Acacia, Robinia hispida, is the only species recommended for forcing. When seen in good condition, this is a most attractive plant. It should be subjected to gentle heat. After flowering, shorten all the shoots, leaving them about one inch long. The shrubs may be either planted out in ordinary garden soil, or kept in pots, re-potting soon after pruning.

SPIRÆA.—Shrubby spiræas are altogether distinct from those of an herbaceous nature. S. cantoniensis, better known as S. Reevesi, is an evergreen shrub of thin, woody growth, and produces small trusses of white may-blossom-like flowers in great abundance. Of this species there is a double-flowering form and several other desirable varieties. S. grandiflora, synonym Exochorda grandiflora, is a good companion for S cantoniensis. All force well and present a very gay appearance. After flowering, prune all irregular growths, and either re-pot or else plant out in ordinary garden soil.

STAPHYLEA.—The Colchican Bladder-nut, Staphylea colchica, is one of the best hardy deciduous shrubs that can be forced for conservatory decoration. Neat plants give a profusion of terminal racemes of sweetly-scented greenish-white flowers, the soft green leaves showing these off to advantage. Treat in all respects similarly to lilacs.

Viburnums.—The well-known Gueldres Rose, V. opulus sterilis, can be forced easily, quite small bushes producing the white snowball-like flowers freely. After flowering, prune moderately hard, and either re-pot or plant out in ordinary soil. V. tinus, better known as Laurustinus, also does well in pots, without much heat, the flowers coming whiter than when grown outside. Prune into shape after flowering, and either give a small shift or plant out in ordinary soil, keeping the soil about them uniformly moist.

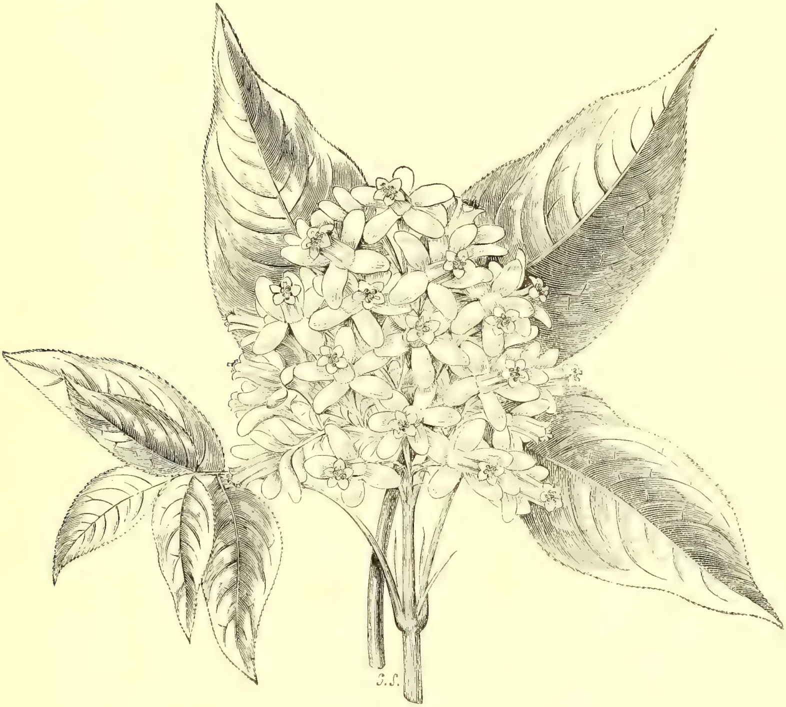

Fig. 145. Staphylea colchica.

Weigela.—The best forcing species is W. rosea (Diervilla rosea) and its varieties.

Strong plants present a very gay appearance when in flower, but unfortunately with this, as with so many other deciduous flowering shrubs, the duration of display is but short. After flowering, harden, cut back and plant out in good ordinary soil.

CLIMBERS.

A conservatory devoid of climbing, wall, and pillar plants can only be regarded as about half furnished. When plants of the nature indicated are judiciously planted and properly treated they do so much towards beautifying and rendering a house attractive that there is less need to employ so many plants in pots as would otherwise be required to make a good display. The less there is seen of the woodwork, pillars, and girders of a conservatory the better. The climbers, in addition to being objects of interest, also serve to relieve the stiffness and formality of conservatories. Many of these, as already hinted, are constructed more with an eye to external appearance than internal effect. Too often no provision, worthy of the term, is made for the roots of wall plants and climbers. Many of the plants employed will not long remain in a free-growing, floriferous state in large pots or tubs.

Narrow borders, or those one foot or less in width, and of varying depths, are better than no borders at all, but the majority of climbers, usually so cramped at the roots, would succeed far better in borders 2 feet to 3 feet wide. The whole of the central beds should be prepared by drainage and the substitution of good compost for the ordinary and probably inferior soil. The additional width to the borders gives much more scope for the exercise of taste by those who are responsible for furnishing the structure. It is true, certain plants are more fastidious as to the kind of soil they prefer than others, but this difficulty is met by simply planting them in what they require. Appropriate composts, with a few cultural details, will be given for the plants to be enumerated, the majority of which succeed well in an ordinary conservatory or warm greenhouse temperature.

Abutilon.—Both the flowering and ornamental foliaged species and varieties of abutilon, briefly described in the chapter devoted to greenhouse plants (page 143, Vol II.), thrive admirably when planted in the beds of large conservatories. They may be made to effectually clothe pillars by training a leading growth or growths straight up the support, the side branches producing flowers freely. Prune these back to the main stem every spring. Plant in a mixture of loam, peat, leaf soil, and a little sand.

Acacia.—For training up pillars and over girders A. dealbata and A. Riceana are the species usually recommended, and to these may be added the old favourite A. grandis. Plant in peaty soil, keep the leading growths closely trained, and allow the side growths to hang loosely. Do what pruning is necessary to keep the growths within bounds in February or March.

Akebia.—A. quinata, which has already been alluded to (page 147, Vol. II.), is a pretty twining plant, suitable for positions where the larger kinds of plants would be out of place.

Berberidopsis.—For a cool position B. corallina can be recommended. It is an evergreen climber, producing numerous sprays of purplish-crimson barberry-like flowers in the summer. Plants can be raised from seed sown in gentle heat in March; and increased by cuttings of young shoots in the spring, also by layering in the autumn. A sandy loam is appropriate soil.

Bignonia.—This class of deciduous climbers must have ample room, both above ground and below, and can only be successfully grown in comparatively large and warm conservatories. B. Chirere, is a fine showy species, B. grandiflora and B. jasminoides also being worthy of inclusion in a select list. They are propagated by cuttings of short young shoots, in sandy soil, and a temperature 65° to 70°. Plant in loam and peat. Keep the leading growths closely trained, and they will then travel to a great distance. The flowering period extends from April to November. In February shorten the weakly growths somewhat severely, leaving the stronger ones to one-half, or rather more, of their original length.

Bougainvillea Glabra.—This plant can be grown and flowered grandly in a conservatory. It may either be planted in a narrow border, or kept in large pots or tubs, and should be trained in a sunny position with a view to bringing out the rich colour of the floral bracts, and well-maturing the wood. In February, shorten all the shoots not wanted for extension to within 1 inch of their starting point, the resulting growths producing the flowers during the following summer. B. speciosa can also be grown successfully in conservatories. This requires more trellis space, and should not be pruned till after flowering. Plant in loam, leafy soil, and sand. They must not become dry at the roots during the growing period, or there may be a serious loss of leaves.

Chorozema.—For clothing archways neatly and effectively, few plants surpass chorozemas. They are never unsightly, if properly treated, and during the spring and early summer months afford a profusion of bright pea-shaped flowers. The best species are C. Chandleri, C. Lawrencianum, and C. Lowi. They must be planted in nearly all peat. Shade from bright sun and never allow the soil to become quite dry. Cutting back irregular growths after flowering, and thinning out occasionally, is all the pruning needed.

CLEMATIS.—Some of the choicer species and varieties of clematis are sometimes grown in cool conservatories, and they are most attractive when in flower. For high roofs and girders C. indivisa lobata is one of the best climbers that can be had. It grows rapidly, is not particularly liable to insect pests, the foliage is good, and in the spring crowds of attractive white star-like flowers are produced. Plant in either beds or tubs, a mixture of two parts loam to one of leaf soil, with a little decayed manure added. Shorten loose growths somewhat freely in January. The single C. florida (Fig. 146) is attractive; the double varieties of the section, John Gould Veitch and Lucie Lemoine, are very beautiful in suitable positions in conservatories.

COBÆA SCANDENS.—This plant, with its variegated form, C. s. variegata, if planted in ordinary soil, and kept well supplied with water at the roots, will ramble in all directions, two plants soon clothing the roof of a large house. The long, pendulous branches, with their profusion of purple flowers and conspicuous seed posd, have a pleasing effect. The green-leaved species is easily raised by sowing seeds in heat in March. Propagate the variegated form by cuttings of young side shoots inserted in sandy peat in a temperature of 75° in March or April.

FUCHSIA.—For clothing pillars and archways, fuchsias are particularly well adapted. All through the summer they bloom profusely, and there is nothing stiff or unsightly about them. Some of the most suitable varieties for the purpose are Miss Berrage, Bountiful, General Grenfell, Doel's Favourite, Phenomenal, Lye's Favourite, Olympia, and Mrs. Rundle. Plant in moderately rich compost, and train straight up the pillars and over the archways. In January cut back all side growths to within 1 inch of the old wood. They should be well supplied with water and liquid manure at the roots during the growing and flowering season, keeping the soil rather dry while the plants are resting. They ought to be syringed once or twice daily till they are in flower.

HABROTHAMNUS.—These plants grow too strongly in borders, for a small house, and are rarely very satisfactory in pots or tubs. Planted in ordinary soil and allowed plenty of head room, they flower nearly all the year round. H. Newelli is brighter in colour than the old favourite H. elegans, but not so constant in blooming. If a yellow-

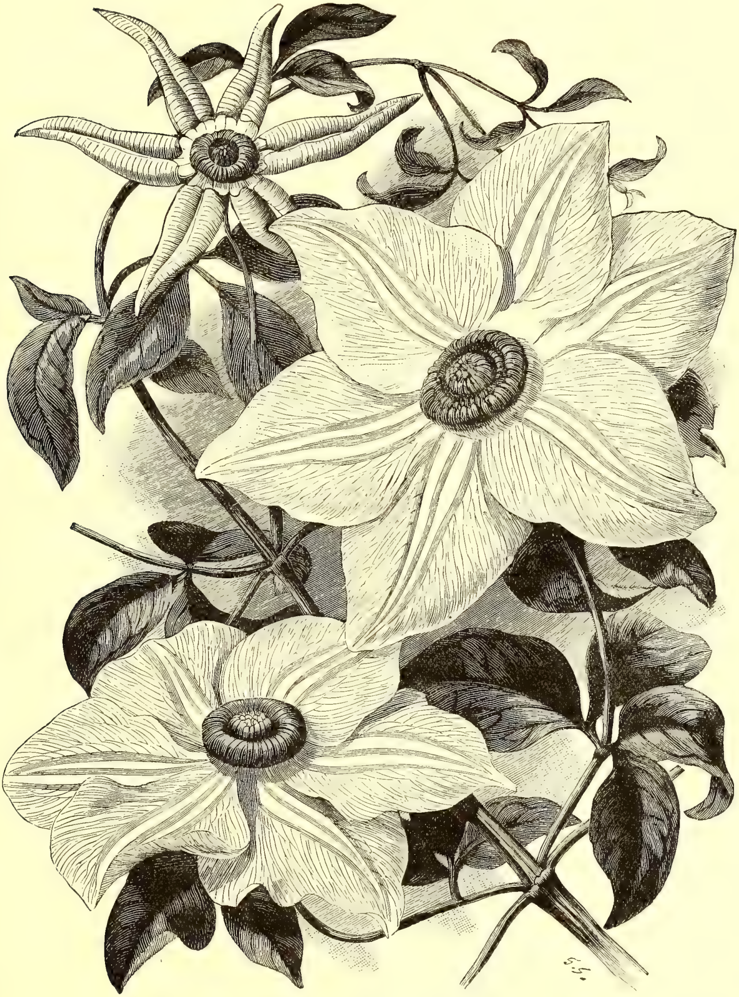

Fig. 146. Clematis florida.

flowering species is desired, plant H. (Cestrum) aurantiacum. Hard pruning is apt to promote too rank growth. Better results attend the practice of cutting out much of the old wood and spray, lightly shortening and laying in the reserved shoots in February. Habrothamnuses are very liable to attacks of green fly, these insects causing the flowers to drop prematurely. Nicotine vapour is the best remedy.

HIBBERTIA.—Among the neat-growing, twining plants, ought to be included H. volubilis. This produces yellow flowers freely all through the summer. Plant in equal parts of loam and peat, with a little sand added. Prune unruly shoots in February. The character of the flowers is represented on page 193, Vol. II.

JASMINUM.—If only one Jasminum is grown, the preference may well be given to J. grandiflorum. When first planted the progress made by this species is slow, hence its description—"a warm, greenhouse bush"; but if it is not neglected in any way, it will gradually forge ahead and clothe a pillar effectually, producing its fine, whitish, sweetly-scented flowers in the spring. J. angulare and J. de Poiteau are stronger growers; these rambling to a considerable distance, and, if suspended to girders, require little or no attention in the way of pruning beyond an occasional thin-out in February. Plant Jasminums in equal parts of loam, peat and leaf soil, adding sand. They are coarse-rooted, and require abundance of water during the growing period.

LASIANDRA.—L. macrantha, also known as Pleroma macrantha, is a grand plant for training loosely against walls and pillars. Under favourable conditions it grows strongly, and during the spring and summer months produces numerous fine, violet-purple flowers. P. macrantha floribunda is a dwarf form of it, this succeeding well in pots. Any time from February to September cuttings of firm, short shoots may be inserted in sandy soil, and rooted in a temperature from 70° to 80°. Top the young plants to make them bushy; or, if desired, the dwarf form may be allowed to branch and flower naturally. The species should be planted out in a narrow border, or grown in a large pot or tub. Prune moderately hard in February.

LONICERA.—The one great drawback to honeysuckles is their extreme liability to attacks from aphides and red spider, and but for this, they would be more frequently seen in conservatories. L. sempervirens minor is the most popular species, this very free-flowering evergreen succeeding well in the coolest of positions. Although it soon fails when the roots are confined to pots, they ought not to have an unlimited border-space assigned them, as this may cause the plants to grow rankly, and flower sparsely. Ordinary loamy soil is suitable. Syringe frequently to prevent red spider attacks; nicotine vapour will destroy aphides. Prune lightly after flowering.

Lophospermum.—When conservatories are first furnished, it is advisable to grow a few quick-growing, easily raised plants to fill up blank spaces till the choicer, slower-growing climbers begin to assert themselves. Among the former ought to be included Lophospermum (Maurandia) scandens. If seed is sown in heat in March, this will germinate quickly in a temperature of 60° to 70°. Place the seedlings singly in small pots, and from these shift them into larger sizes before they become root-bound. They may be trained up strings, wires, or trellises, and will flower the same season in 8-inch or larger pots, or may be planted out in ordinary rich soil: if the roots are confined to pots, abundance of water and liquid manure will be needed to free, healthy growth.

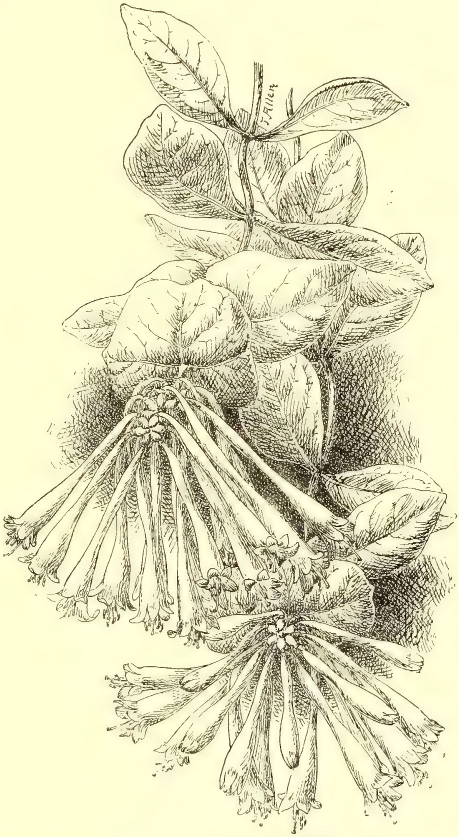

Fig. 147. Lonicera sempervirens.

Mandevilla.—The only species cultivated, M. suaveolens, is strong growing and suitable for high-roofed conservatories, where it will produce its handsome sweet-scented white flowers from June to September. It ought to be planted in equal parts of loam and peat, adding sand and charcoal. During the growing season water freely, and syringe daily if possible. Shorten back all hanging or loose growths in the autumn to near the old wood.

Passiflora.—For the roofs, girders, and the taller archways of conservatories, Passion Flowers are great favourites. P. cœrulea and its varieties racemosa and Constance Elliott are nearly hardy, very floriferous, and the last named is the nearest white in colour of all the family. P. Imperatrice Eugenie is sturdier in growth, has bolder leaves and larger flowers than the three varieties just named, and this also succeeds well in a comparatively cool house. They are propagated by cuttings of young shoots 4 inches or rather more in length, under a bell-glass in gentle heat, any time from April to September. They are coarse-rooted and soon become starved in pots. On the other hand, if given unlimited root-room they grow more grossly than is desirable, not flowering well under such conditions. A narrow border and ordinarily good soil suits

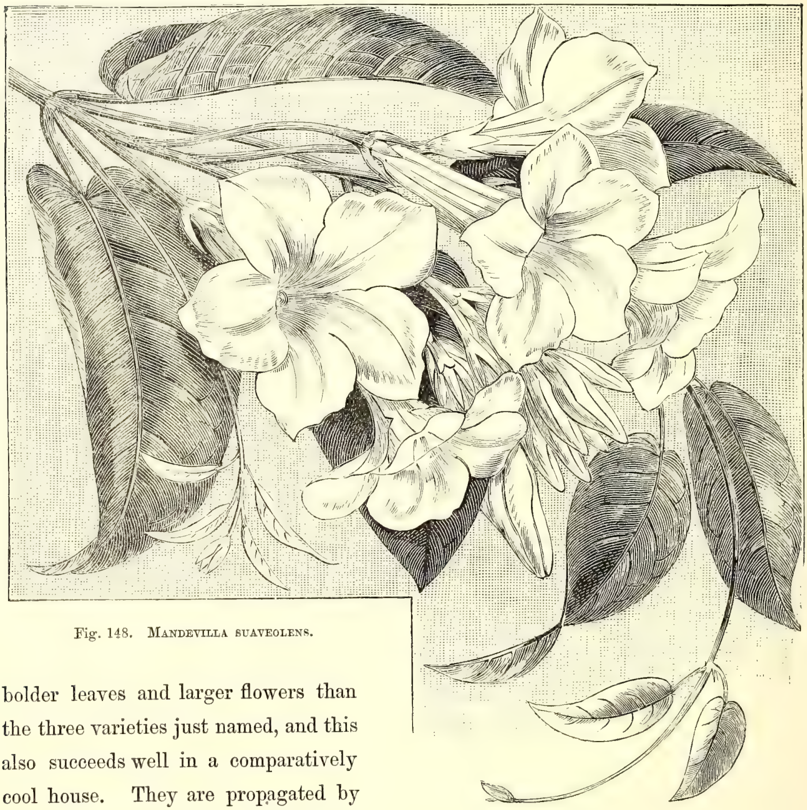

Fig. 148. Mandevilla suaveolens.

them best. Only the leading growths should be neatly trained, the flowers showing to the best advantage on long pendent shoots. In February shorten all hanging growths to within 1 inch of the old wood, and the leaders, if any, should also be shortened somewhat. A little thinning out of the flowering shoots may be desirable during the summer, especially if they shade any plants underneath more than is good for them. Apply abundance of water, and assist old plants with liquid manure during the summer.

PELARGONIUMS.—Strong-growing, free-flowering zonales are suitable for covering dry, sunny back walls of conservatories. The semi-double F. V. Raspail is, perhaps, the best for such positions, large plants presenting a very gay appearance and afford an almost unlimited supply of flowers for cutting. The ivy-leaf varieties are suitable for covering walls as well as for pillars and archways. Ryecroft Surprise, Beauty of Castle Hill, Flambeau, Giroflee, Isadore Feral, Jeanne D'Arc, Le Printemps, Percy Surman, Ryecroft Scarlet, and Souvenir de Charles Turner, are all good double or semi-double flowering varieties. Plant in narrow or restricted borders, tubs or large pots, in ordinary soil. The leading growths should be kept trained, and young shoots ought to be frequently laid in with a view to keeping all parts of the wall, pillars, or archway, as the case may be, evenly furnished with loose flowering lateral growths. Cut out old growths in February.

PLUMBAGO.—P. capensis and the pure white form, P. c. alba, are suitable for covering walls and clothing pillars in high conservatories. If too liberally treated at the roots, the plants grow more strongly than is desirable, but they succeed well when planted in a narrow border, in a mixture of loam, peat, leaf-soil and sand. If the leading growths are trained straight upon wall or pillar, they branch freely, and every side shoot flowers. Each autumn, after flowering, all loose growths should be severely shortened, with a view to obviating unsightliness and to having plenty of young shoots the next season. Syringing the plants daily helps to keep them free from thrips, but if this cannot be done, recourse ought to be had to nicotine fumes. Abundance of water and, if the soil has not been renewed for some time, liquid manure also should be applied during the growing and flowering season.

RHODOCHITON VOLUBILE.—Known also as Lophospermum atrosanguineum, this is a distinct, free-growing and profuse blooming conservatory climber. The flowers hanging in pendent clusters (Fig. 149) invariably arrest attention by the calyx being coloured as well as the corolla, though in a paler shade of red. Plants are raised from seeds as advised for Lophospermums, and increased by cuttings under a bell-glass during the summer. Sandy loam, with a little peat intermixed, is suitable for this easily-grown plant.

Roses.—If roses can be kept free from mildew, red spider and aphides, they should find a place in most conservatories. The Noisettes—Marechal Niel, Lamarque and W. A. Richardson—are strong-growing and free-flowering, neither being affected by mildew and insect pests so seriously as other less vigorous roses often are. Sunny walls and a roof trellis are the best positions for them, and, after flowering, they ought to be

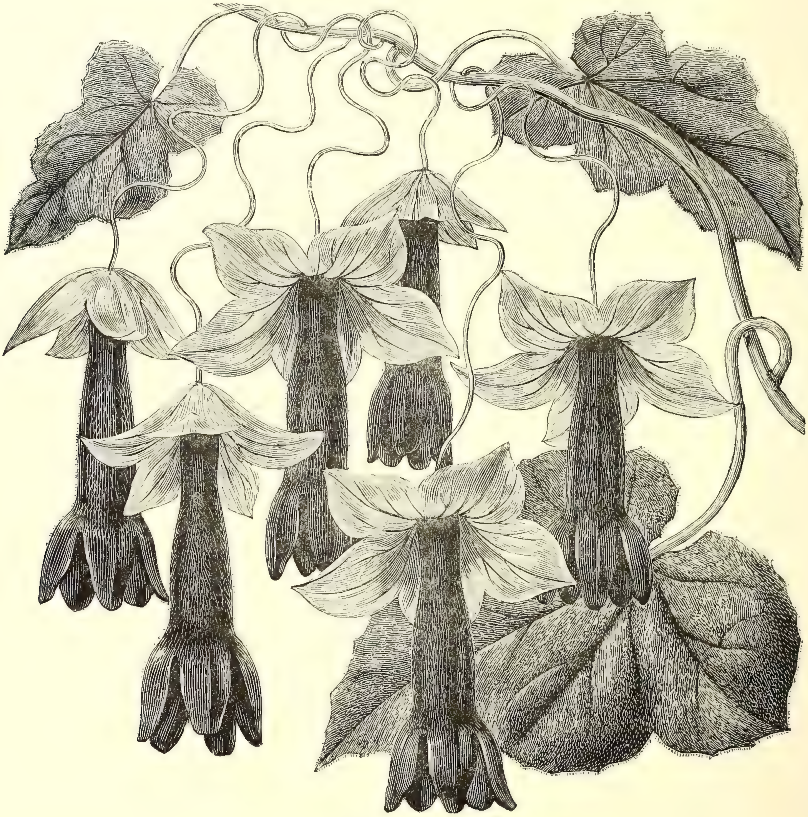

Fig. 149. Rhodochiton volubile.

rather severely pruned with a view to securing numerous long and strong shoots to flower the following season. Teas—Niphetos, Madame Lambard, Perle des Jardins, Marie Van Houtte, Souvenir d'un Ami, Souvenir de Thérèse Levet, Sofrano, Francisca Krüger, Anna Olivier, Comtesse de Nadaillac and Isabella Sprunt are among the varieties that succeed against conservatory walls and pillars. Plant in a rich, loamy compost, as they cannot well be grown too strongly. Syringe with soapy water for preventing insect and mildew attacks. Prune the Teas moderately hard in February, cutting out spray and shortening the stronger leading shoots to about one-half of their length, and the side growths to the second or third joints; also cut the flowers, whenever wanted, with long stems; this hard spring and summer pruning causes the plants to break afresh more strongly and to flower better than is the case when little or no pruning is done.

Solanum Jasminoides.—This white-flowering species is nearly hardy and succeeds in a cool conservatory. Unless starved at the roots, a single plant is capable of clothing a fairly large roof with flowering growths during the greater part of the year. Cuttings of young shoots inserted in sandy peat during March or April, and given a temperature of 65° to 70°, will emit roots freely. The plants may be flowered either in large pots or planted in a narrow border, employing equal parts of loam, peat and leaf-soil, with a little sharp sand. The leading growths are apt to twine round wires or anything else they come in contact with, and it is well, therefore, to prevent this by training frequently. In February all loose growths should be shortened back to near the old wood, and soon after the plants in pots or tubs should be turned out, have the ball of soil and roots considerably reduced, and be then returned to much the same size as they were in before, using a generous compost and pressing it firmly.

Sollya.—Blue flowering climbers are somewhat scarce, and, as very little room would be taken up by S. heterophylla and S. linearis, these evergreen species, one or both, ought to be grown in most conservatories. They may be planted in beds or grown in moderately large, well-drained pots. The soil suitable is a mixture of two parts peat to one of loam, with a little sand. Train up the wires attached to pillars and rafters. They may be grown in the full sun, but should be syringed daily, and kept in a moist state at the roots. Propagate by cuttings inserted in sand, in a temperature of 65° to 75°, cover with a bell-glass.

Tacsonias.—These are admirably adapted for clothing the roof and festooning rafters and girders with long flowering trails, and nothing much showier or attractive could well be named. Their one fault is a tendency to produce far more growth than there is room for. Yet so coarse and hungry-rooted are they that plants in pots or tubs soon present a starved, unsatisfactory appearance. T. mollissima, T. pinnatistipula and T. Van Volxemi are the older favourites, but for the last-named T. exoniensis, as being the more floriferous, may be substituted with advantage, and if room for one species only can be found, the last-named may be selected. T. Smythiana is spoken of as a desirable novelty. Tacsonias are nearly allied to Passifloras, and succeed under similar treatment. Old plants should have an annual top-dressing of rich compost. The advice as to thinning out the young growths when becoming crowded ought always to be followed.

TROPÆOLUM.—The best of the climbing varieties belonging to the Lobbianum and majus species are suitable for conservatory culture, but all things considered, Ball of Fire is the type that should be given the preference. From cuttings of short growths rooted in March in heat, plants strong enough to clothe an archway can be grown the same season, these flowering profusely during the late autumn and winter months. They should be kept in pots—the 10-inch size answering well. Pot in a mixture of two parts sandy loam, one part each of leaf soil and fine manure, with a little sand. When the soil is fully occupied by roots, assist with liquid manure.

VARIOUS CLIMBERS AND WALL PLANTS.—Camellias planted in narrow borders against conservatory walls will effectually cover them, always looking well, whether in or out of flower. The old Cassia corymbosa, planted in ordinary soil, quickly clothes high end or side walls with growth, and will flower profusely during the summer. It neither clings to walls nor climbs up pillars or other supports, but has to be secured to any surfaces it is intended to cover. It is, perhaps, the most effective when it assumes a bushy habit or forms a tree-like head. It then produces clusters of bright yellow flowers, successionally set off by bright green, glossy leaves. Prune unequal growths in February. Clianthus magnificus and C. puniceus, planted in loam, leaf soil and sand, and kept free from red spider, are effective pillar and roof plants. Hardenbergia Comptoniana and Kennedya Marryattæ are to be met with in good collections of conservatory plants. They are nearly allied, twining, pea-flowering plants, suitable for clothing partially shaded pillars and archways; plant in peaty soil. Heliotropes are favourite wall and pillar plants. All the strong-growing varieties are suitable for the purpose. Plant in narrow borders and ordinary soil. Prune lightly, merely regulating the growths. Hoya carnosa (page 194, Vol. II.), may be trained in a sunny position not far from the glass, where it should flower abundantly; the roots are best confined to pots. Lapagerias, in addition to being grown in pots and tubs, as advised in the chapter on greenhouse plants (page 199, Vol. II.), succeed still better planted out in a mixture of fibrous loam broken up roughly, peat, lumps of charcoal and sharp sand, and trained thinly not far from the glass. When well established, they ought to receive abundance of water at the roots, and should always be shaded from strong sun. The succulent young shoots, when coming through the soil, must be carefully protected from slugs. Mikania scandens, known also as Senecio macroglossus, a near ally to eupatoriums, is suitable for covering trellises in a conservatory; it has ivy-like leaves, and produces flowers similar to yellow marguerites, but brighter, in the winter (Fig. 150); pot in a rich, loamy mixture. Rhyncospermum, previously recommended for greenhouse culture, also succeeds well planted out in a conservatory and trained up pillars and over archways; plant in equal parts of loam and peat, adding charcoal and sand. Swainsonias are good for walls and pillars. They may be planted in narrow borders or kept in pots; soil suitable, two parts of fibrous loam to one of peat, with sand. Syringe freely to keep down red spider, apply weak, liquid manure to those well-established in pots. Tecoma jasminoides is a handsome, strong-growing climber, requiring the same treatment as Bignonias, to which class of plant it is a near ally. Asparagus plumosus and tennuissimus can be successfully grown, planted in rich soil in a warm, shady part of a conservatory, where they will clothe the pillars beautifully. Smilax (Myrsiphyllum asparagoides) requires very similar treatment, long strings being provided for the growths to twine round. Ficus

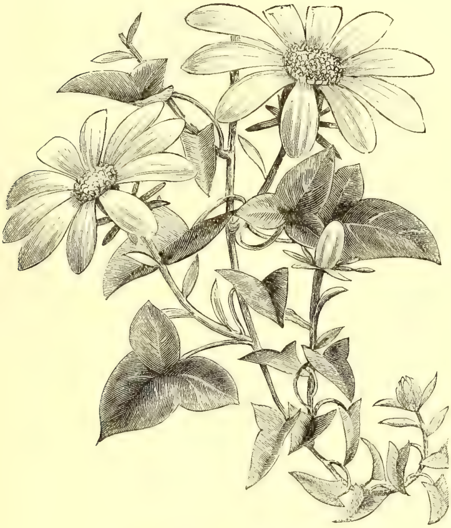

Fig. 150. Senecio macroglossus.
(The Ivy-leaved Senecio.)

repens is nearly hardy, and planted against a back wall will quickly cover it with neat, green shoots and foliage without any trouble expended in training. It may be cut back to the wall every spring, similarly to ivy.

HANGING BASKETS.

The larger conservatories are incomplete without a few baskets of plants suspended from the centres of archways and other positions, where they will prove attractive in themselves and relieve the stiffness of the surroundings. In the smaller buildings room can generally be found for a limited number of baskets, taking care to suspend them where they will neither interfere with the comfort of visitors passing through the conservatory, nor present a crowded appearance. Strong, galvanized wire-baskets with movable central crates are usually employed, and failing crates sacking should be used inside to keep the soil together. If the baskets can be filled and the plants given a start in a warm greenhouse before suspending them in a conservatory, they will be more quickly effective. They ought to be heavily lined with fresh moss, clean side outwards, and suitable soil used for the plants employed, making this firm about them, allowing sufficient surface room for water. Mixtures of several distinct kinds of plants are undesirable, the more pleasing baskets, as a rule, being filled with one or two kinds only. For the more shady positions ferns are the best, nothing surpassing grand specimens of Woodwardia radicans, Goniophebium subauriculatum, Asplenium longissimum, Nephrolepis exaltata, Microlepia hirta cristata, Gymnogramma schizophylla, Davallia canariense, D. dissecta elegans, and D. Mariesi. With these may be associated Adiantum assimile, A. gracillimum, A. lunulatum, and Selaginella Kraussiana, the latter for covering the surface of the soil, and in some cases the sides of the baskets.

For the more exposed positions baskets filled with achimenes, Ivy leaf pelargoniums, Epiphyllum truncatum, drooping tuberous and other begonias, petunias, tropœolums, fuchsias, convolvulus and lachenalias, associating with some of these Vinca major elegantissima, Othonna crassifolia, Panicum variegatum, Saxifraga sarmentosa, Sedum Sieboldi variegata and Tradescantia discolor. Some of the Oxalises are suitable for baskets, as may be seen by Messrs. Sutton & Sons' illustration (Fig. 151).

Ferns in particular will, if properly looked after, remain in a healthy, ornamental state without disturbing the roots for several years in succession, but most of the flowering plants, also those grown for the beauty of their leaves, ought to be given the benefit of fresh soil at least every second spring. Refilling the baskets with young plants every season is desirable in the case of the more rapid growers. It is of the greatest importance that all plants in suspended baskets receive abundance of moisture at the roots, especially from April to October inclusive. Merely syringing with tepid water every clear morning is not enough. They should receive a gentle, yet thorough watering as dryness of the soil is perceptible, and occasionally it is necessary to take down and soak some of the smaller or more exposed baskets in a tub or tank of water. Neglect these precautions, and the baskets will soon become unsightly rather than ornamental.

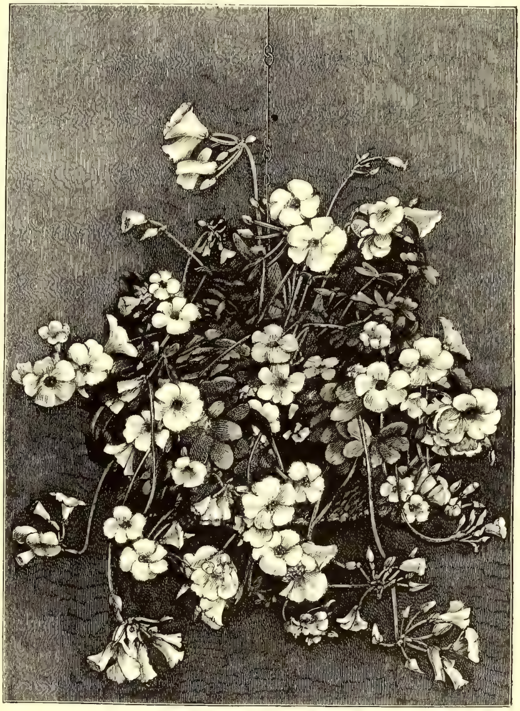

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Fig. 151. Oxalis.—Sutton's Golden Cup.

FLOWERING PLANTS FOR EACH MONTH.

January.—It is possible to have a good display of late chrysanthemums throughout this month, associating with them double and single daffodils, early white narcissi, Roman hyacinths, early single tulips, scillas, ericas, Chinese primulas, and cyclamens.

February.—Forced deciduous and other flowering shrubs ought now to be in evidence. Included among these should be lilacs, Staphyleas, deutzias, Azaleas amœna, and mollis, also the earliest in the indica section. Other plants in flower at this time of year, without forcing, are Erica hyemalis, E. Wilmorei and epacris in variety. Sparmannia africana, genetyllis, correas, cytisus, coronilla, acacias, camellias, cinerarias, primulas, cyclamens and callas, associating with them the gay spiræas, daffodils, hyacinths, Lily of the Valley, tulips, crocuses, and other forced bulbs or plants.

March.—Forced shrubs, including rhododendrons, among the larger plants, Azalea indica in variety, imantophyllums (clivias), callas, pelargoniums, dielytras, with most of the other plants named for February, should make a grand display, the conservatory during this month being at its gayest.

April.—During this month the beautiful hybrid and greenhouse rhododendrons are available without forcing, together with a good assortment of other plants and shrubs, including Indian azaleas, acacias in variety, amaryllises, chorozemas, genetyllis tulipifera, polygalas in variety, boronias, eriostemons, aphelexis, hydrangeas and zonale pelargoniums, with the usual round of small bulbous-rooted plants, as well as cinerarias, marguerites, primulas, dielytras and cyclamens.

May.—A large number of flowering plants can be had at their best during May, and the conservatory easily kept in a most attractive condition. Those that may be specially mentioned are retarded Indian azaleas, roses in variety, carnations, including the Malmaison group, calceolarias, heliotropes; show, fancy, zonal, and ivy-leaf pelargoniums; also Campanula media calycanthema, fuchsias, Lilium longiflorum and L. Harrisii; with Hydrangea paniculata, abutilons, spiræas, Primula obconica, calceolarias, petunias, Gladiolus Colvillei and mimuluses.

June.—During June many of the climbers are at their best, while for the beds and stages, liliums, tuberous begonias, fuchsias, Hydrangea hortensis, zonal pelargoniums, heliotropes, tuberoses, Agapanthus umbellatus, torenias, celosias, achimenes, francoas, Hyacinthus candicans, and gladioli in variety, are available.

July.—With abundance of flowering plants in the open there is less need to strive to grow so many for the conservatory. Coolness and shade are most desirable, this suiting palms, ferns, Rex begonias and other fine foliage kinds, better than ordinary flowering plants. A good selection of these for associating with palms and ferns, are achimenes, begonias, gloxinias, gesneras, celosias, cockscombs, torenias, kalosanthes, Hyacinthus candicans, tuberoses, and Lilium lancifolium.

August.—What has been advanced concerning July also applies to this month. At this time Campanula pyramidalis in variety ought to be gay with flowers, also Liliums auratum and lancifolium, achimenes, gloxinias, and others continuing their bright career.

September.—The summer flowering plants previously named will, in many instances, last well into September, and can be supplemented by early flowering chrysanthemums, Marguerite carnations, mignonette, rhodanthes, and Vallota purpurea.

October.—A good display can be made during this month with large and small plants of zonal pelargoniums, early chrysanthemums, and also Salvias splendens, Hoveyi and Pitcheri; eupatoriums, bouvardias, Plumbago capensis, lasiandras, Luculia gratissima, carnations and early-flowering ericas.

November.—Chrysanthemums overshadow everything else this month, Persian cyclamens, Chinese primulas, and Roman hyacinths proving of good service for the front rows.

December.—Chrysanthemums are still the chief flowers, while towards the end of the month the small plants named for November should be supplemented by Van Thol tulips, paper-white narcissi, earliest daffodils, crocuses, scilla, tuberoses, hellebores, double Chinese primulas, early cinerarias, Coronilla glauca, poinsettias, callas, Azalea indica Deutche Perle, libonias, and violets.

PLANT AND FLORAL DECORATIONS.

MUCH as we may admire plants growing in glazed structures and in the open air, it is not in these positions where they are most appreciated, but rather, and necessarily so in many instances, in the dwelling house and its immediate vicinity. A few, or many, well-grown potted plants, notably those with ornamental foliage, associated with large and small vases filled with cut flowers and greenery, add so much to the beautification and enjoyment of a home, that their employment cannot be objected to on account of the losses thereby entailed. As a matter of fact plants and cut flowers are, nowadays, regarded as indispensable for house adornment, and out of the demand thus created has grown a great industry that finds employment for thousands of men, women, and boys. Private gardeners find this so-called "craze" for plants and cut flowers in the house a little irksome at times, but if the care of the plants and the cutting of the flowers wanted for vases were left to them, there would be fewer losses of valuable plants to mourn, while the disfigurement of plants, frequently to be seen after inexperienced individuals have cut flowers from them, would be obviated. It is now generally conceded that plants purify the atmosphere instead of tending to render it impure, and that the odours from flowers are not nearly so injurious as were thought at one time. It is not the poorest of plants and the most rubbishy flowers that should be employed in house decoration, but rather the best of everything, disposed in such a manner as to show to the greatest advantage, due regard being paid to the surroundings and requirements of those who either own the establishment or are responsible for the decorating.

ROOMS.—We can only generalize on the subject of room decoration, so much depending upon the interior arrangements of a house. As a rule, well-grown plants, large, medium-sized, or small, according to circumstances, are preferable to groups or masses of plants for ordinary house decoration. For the most exposed positions the hardier kinds of plants should be employed as much as possible, reserving those that have been grown in strong heat for sheltered nooks, the rush of cold air housemaids are in the habit of admitting early in the morning soon proving fatal to tender plants or cut flowers.

For the entrance-hall a few tall palms, notably Kentias Belmoreana and Fosteriana, are required, a pair of these flanking the foot of the staircase, showing well above the balustrade. By way of a change, Latania borbonica may be substituted for the kentias; tall specimens of Seaforthia elegans, Arecas lutescens and rubra, and the clear-stemmed conservatory dracænas are also highly effective in these positions. On special occasions a group of ferns, flowering and fine-foliaged plants (Fig. 152), may be arranged with advantage on each side of the staircase, still retaining the bolder plants

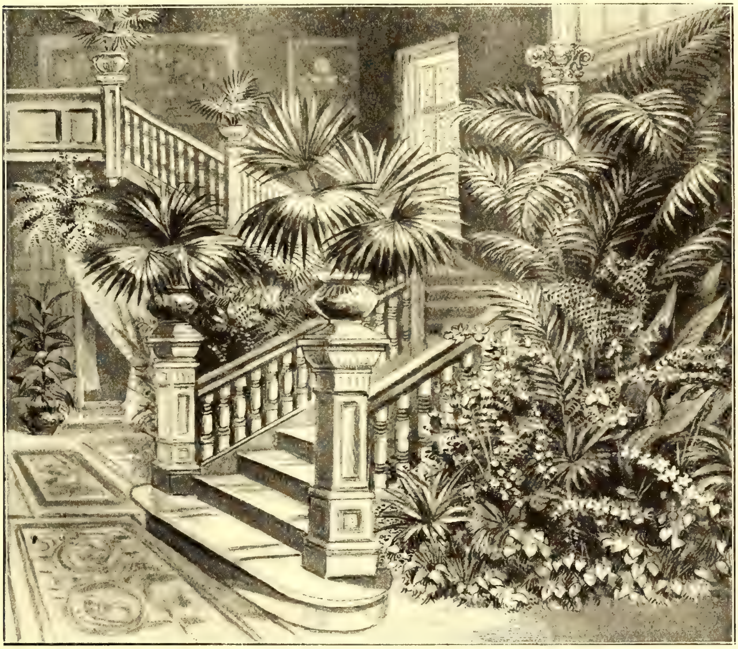

Fig. 152. Hall and Staircase Decoration.

already alluded to. In the larger halls there are usually one or two old-fashioned fireplaces, and if these are not in use, opportunities are afforded for arranging attractive groups of plants, either in the fireplaces or in stands in front of them. If large vases have to be filled with plants, single specimens of good form and colour are the best for the purpose. Coleuses, crotons, dracænas, caladiums, marantas, pandanuses, adiantums, aspleniums, davallias, and other elegant kinds are recommended for vases, well covering the tops of the pots with fresh green moss. One or two groups of plants in the lesser corridors are frequently effective, and for both these and the entrance-hall large, single, trumpet-shaped vases, filled in a bold manner with coloured foliage, grasses, and one or two kinds of flowers are suitable.

Drawing-rooms demand that the greatest taste ought to be displayed in them, as it is there where many hours are spent by the ladies of the establishment and their guests. Everything should be done to make these rooms as enjoyable as possible. During the warmer parts of the year an air of coolness ought to prevail; more colour is needed when everything outside presents a cheerless, desolate appearance, as then warmth is desirable. Nothing should be done to obstruct free movement, too much furniture being already found in numerous drawing-rooms. During the late spring, summer, and early autumn months, space ought to be found, say at the back of a couch or couches, or one or more moderately tall elegant palms, a dwarf latania, or a group of ferns, hardy or otherwise; and failing these, large vases of hardy fern fronds, with or without marguerites and grasses interspersed, might well occupy the fireplace, and a few single, light palms, ferns or grasses be disposed here and there on the tables, or about a large room. During the duller parts of the year, large flowering plants, notably Chrysanthemums, arums, rhododendrons, and azaleas, might be substituted for the palms; callas and dwarf chrysanthemums for the green plants, supplemented by a few bold vases of flowers. Corner ornaments, filled with everlastings and grasses, would also tend to brighten the room. Pots of hyacinths, daffodils, narcissi, tulips, cyclamens, and Lily of the Valley distributed about the tables, supply both colour and perfume. Plants on mantelpieces and other somewhat high positions are apt to look stiff and out of place. For a temporary effect, a thin bank could be formed with either mosses or maiden-hair fern, in small pots, arranging these nearly on their sides, so as to hide the pots. Among them may be dotted a few odontoglossums, small Calanthes—Veitchi and vestita—and other orchids that produce neat, arching spikes of flower. Roman hyacinths, Lily of the Valley, and dwarf daffodils might be substituted for orchids, with pleasing results.

The most pleasing effects are not produced by a lavish display of floral material. An artistic eye and deft hand are the chief essentials for the picturesque association of foliage and flowers. The photographic illustration (Fig. 153) represents a stand, arranged by Mr. H. Dunkin, in the drawing-room of the Countess of Warwick. The tall, slender stems of Cyperus alternifolius are skilfully disposed, and the light use of fern fronds, with the sparing employment of orchids and callas, complete an arrangement in which every item employed displays its own beauty, while the judicious blend and balance is entirely satisfactory. The example affords an object-lesson worthy of study by all who desire to excel in decorations of the nature portrayed.

The dining-room is frequently too small to admit of decorating it with plants, other than on the dining-table, of which something has to be written a little later; but it is sometimes possible to arrange a light group of palms, crotons, dracænas, grasses, ferns, or other appropriate kinds, at the back of the larger sideboards. The fireplace, when not in use, can also be decorated with plants, as advised in the case of entrance-halls, also corner groups of palms and other plants are occasionally possible, as well as desirable.

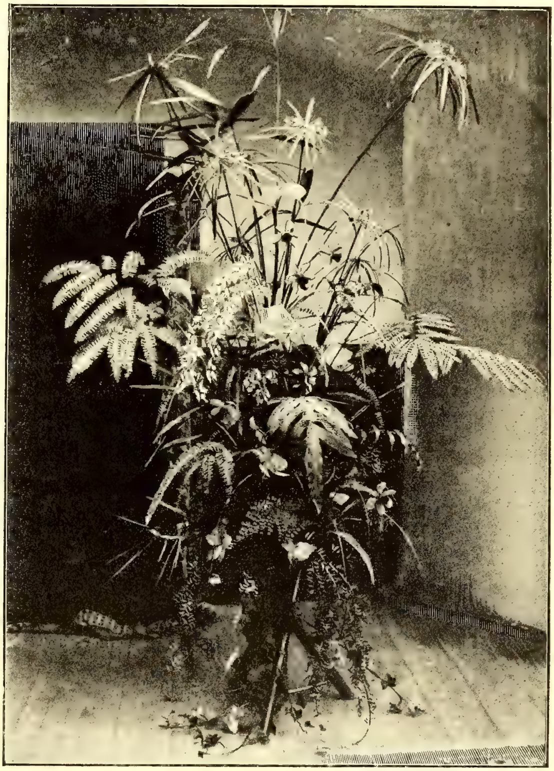

Fig. 153. Artistically-arranged Stand.

Only the lightest or most elegant plants, such as Cocos Weddelliana, Geonoma gracilis, Crotons Chelsoni, and interruptum aureum; Begonia Gloire de Lorraine, Cyclamen persicum, Roman hyacinths, Lily of the Valley, snowdrops, and others of an elegant character, with small vases, each filled with one kind of sweet-scented choice flowers, are tolerated in the ladies' boudoir; plants are rarely placed in bed and dressing-rooms, unless by special request. Space is generally found in smoking-rooms for a few plants in vases and some cut flowers, but billiard-rooms frequently open into conservatories, and therefore need no decorating.

Halls and Corridors.—For special occasions, such as public receptions, balls, and concerts, rather elaborate decorations are needed in large halls, corridors, and reception-rooms. Those light forms of embellishment that are correct enough in the case of ordinary rooms, would be ineffective where large numbers of people are brought together; something on a heavier, bolder scale must be attempted. Not much can be done without the aid of tree ferns, also kentias, seaforthias, arecas, and other palms, 6 feet to 12 feet in height, towering lightly well above the other occupants of the room. Where they shall be grouped must depend upon circumstances, but, as a rule, they are located either at wide intervals, along the sides of a hall, or at the ends and corners. Such plants alone are not sufficient, and at the base of each, whether arranged either somewhat closely or far apart, may be disposed a group of fine-foliaged and flowering plants, with abundance of ferns and fresh moss to hide the pots, and to obviate stiffness of arrangement. If fresh, bright moss is plentiful, it is a good plan to break up banks of plants into small groups, and fill in the spaces and undulations between them with the moss. Ample space being allowed, tiny attractive plants may be dotted about the moss, the whole producing a cool-looking and attractive effect, very different to the old solid banks of plants that have done duty in bygone years. Strips of virgin cork can also be turned to good account in connection with large groups of plants. Large pots and pedestals used for raising some of the more ornamental plants to a height at which they may be seen to advantage, can be covered with cork, pockets also being provided for holding small plants. In this way, large groups can be formed with only a comparatively few groundwork plants, and these light, artistic arrangements admit of every choice plant being seen to advantage.

A few tall palms are sometimes effectively disposed in the fronts of galleries overlooking halls—not in a continuous row, but in groups, equidistant from the centre and outside walls, with perhaps a few plants to match them at each end. Trailing plants, including ivy-leaf pelargoniums, tradescantias, ivies, smilax, asparagus, and grasses, may be passed through the balustrade rails, and thus, suspended from the gallery in a continuous line, add to the general effect. The pots inside the rails should be covered with green baize or moss. Pedestals (Fig. 154) appropriately disposed in such or similar positions, or in rooms, have, when tastefully furnished with palms, ferns and trailing plants, a beautiful appearance, flowers being seldom employed in such adornments. Vases for cut flowers, if any are used, ought to be of trumpet shape, and filled with arums, sunflowers, chrysanthemums, or other bold flowers with long stems.

Corridors leading to large halls are generally cold and airy, even though shielded by drapery. In such positions the hardier palms, such as Chamrærops excelsa, Corypha australis, Phœnix dactilifera, and Seaforthia elegans, may be arranged singly at certain intervals, or be associated with eucalyptuses, acacias, grevilleas, aspidistras, the hardier kinds of ferns, Aralia Sieboldi, Ficus elastica, chrysanthemums, and other half-hardy plants. Bold plants of Araucaria Cunninghami, A. excelsa, and other elegant conifers, are also of service for decorating corridors. Hardy conifers are not grown for this purpose nearly so much as they should be. For special occasions tall, well-formed, but not very heavy, cupressuses might be lifted from the open ground, their roots freely reduced, then placed in pots large enough to keep the plants steady. With soil firmly packed about the roots, and water freely supplied, they can be kept in a presentable condition for a fortnight or longer. In the draughty corridor of a large

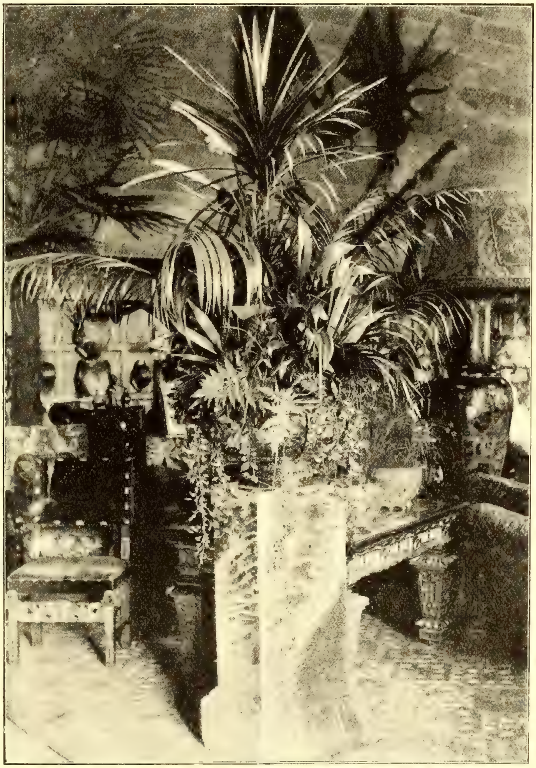

Fig. 154. Pedestal Adornment.

mansion, Cupressus dolabrata gives more satisfaction than any other plant, and remains in position for months.

WINDOWS.—Where dwelling-houses are surrounded by their own grounds, it is a mistake to shut out any portions that are not open to the public by means of window plants. The window ought to serve as a picture-frame for refreshing green lawns, noble trees, and grand borders of flowers all coming into view. Such beautiful features are shut out by window plants. Where there are no gardens to look out upon, and

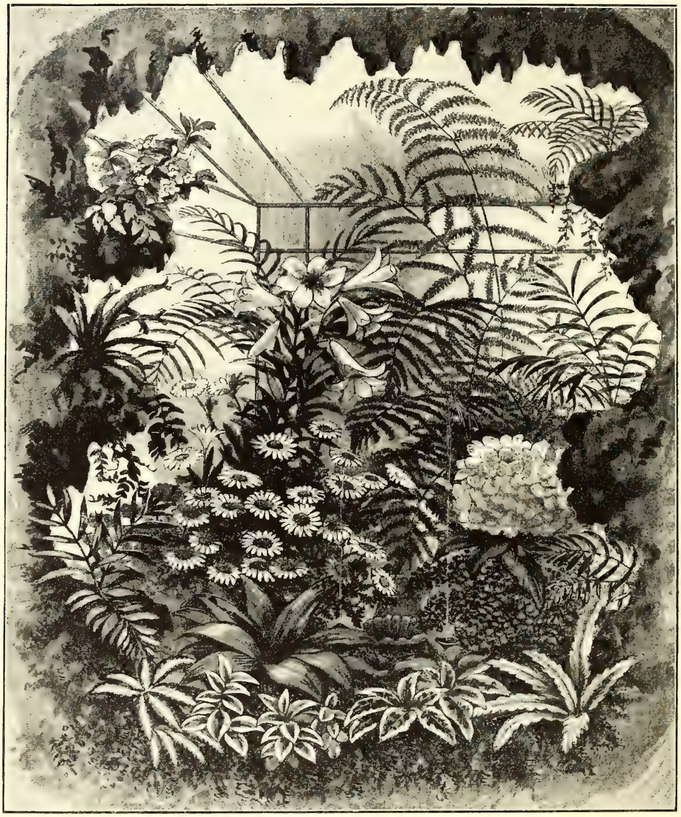

Fig. 155. OUTLOOK FROM A LONDON WINDOW.

little or nothing green to see, then window plants are desirable. If privacy is an object in view, then a Wardian case, filled principally with ferns or a row of plants, is needed. Charming outlooks can be produced by providing a glazed convenience for plants outside a window on the back portion of a house, of which the normal prospect includes dingy walls and gaunt chimneys. The illustration (Fig. 155) represents the view from a back window in the London house of Mr. Yates Thompson when he was proprietor of the *Pall Mall Gazette.* An irregular frame of rustic cork added to the effect of the floral picture, and the window could be conveniently opened for arranging and attending to the plants.

In the absence of such arrangements, one really good window plant, such as a well-grown Adiantum cuneatum, A. pedatum, Asplenium flaccidum, Pteris tremula, P. serrulata cristata, Kentia Fosteriana, Latania borbonica, Ficus elastica, Aralia Sieboldi, and, if gas has to be reckoned with, Aspidistra lurida and its variegated form, are to be preferred to several one-sided plants in variety. A number of greenhouse plants, we gladly admit, can be successfully cultivated in windows, and much pleasure is derived by innumerable amateurs from such ornaments of their houses.

Dwelling-houses are regarded by many persons as most destructive to plant life, but they need not necessarily be so. Why so many plants live in rooms only a comparatively short period of time, is because they are wrongly treated, gas also proving very injurious. As previously observed, they must not be subjected to rushes of cold air, especially if altogether unprepared for such treatment. Those grown in a warm house of any kind ought first to be hardened somewhat, then low temperatures and cutting winds will not then affect them so badly. There is really no necessity for raising the lower half or sashes of windows. It is through the upper openings that vitiated air and dust most readily escape, and the purifying can be done without unduly lowering the temperature of the rooms, or injuring delicate plants.

Large numbers of plants are practically ruined through either watering them recklessly or not at all. In rooms it is possible they may not need so much water as they did in lighter, heated houses. Stove plants ought particularly to be examined most carefully before watering, as supplying them with as much water as they received previous to being brought into the rooms may prove fatal. No plant should be watered till the soil is becoming dry, when enough ought to be applied to thoroughly re-moisten it. Nor ought water that has drained out of pots to remain in the saucers or troughs holding them, as this passes upwards by capillary attraction, and the soil soon becomes sodden, which means death or serious injury to the plant. Palms and other kinds, with hard, smooth surfaces to their leaves, are the most durable, especially if the dust is sponged from them occasionally, but, where possible, changing the plants before they suffer injury, is the best course to pursue. The best gas-resisting plants are aspidistras, Aralia Sieboldi, Ficus elastica, Latania borbonica, and Kentia Fosteriana.

Wardian cases are of great service where gas is the illuminating power. In these ferns and kindred plants will thrive admirably owing to the cases excluding the fumes of gas, while retaining genial moisture. In glazed cases a miniature rock-garden may be formed with stones, moss, and sandy peat soil, planting in it various ferns and a small plant or two of the common ivy. Many persons dispense with soil and keep their plants in pots, plunged in moss or covered with bits of virgin cork, or spar. The contents of these cases ought to be shaded from strong sun. Water must be supplied to the plants when needed, and if the case is slightly opened at any time, let it be when the room has been well cleared of gas fumes by ventilation.

TABLE DECORATIONS.

During the past quarter-of-a-century, quite a revolution has been effected in the style of decorating dinner-tables, a change for the better having taken place all round. The heavy, rich, sombre style no longer prevails. Instead of doing our best to depress the spirits of those who gather round our tables, everything is now done to make their enjoyment as complete as possible. It is not enough to cater for the mere appetite, but our aim should be rather to do everything possible towards promoting a lighter, healthier, and intellectual repast. A sensibly and tastefully adorned table does undoubtedly add to the pleasure of most guests, and no decorator worthy of the name would arrange, and no refined host nowadays tolerate, either huge masses of flowers or large, heavy plants on their tables. Host and hostess ought to be able to see each other as well as their guests without any craning of necks during the course of conversation.

It does not follow that those exceptionally light, and it may be prettily, decorated tables, common to many flower shows are always to be commended for a real dining-table. Much ought to depend upon its size and the surroundings generally. In some instances very light materials, sparingly employed, might be pleasing, but more often than not they would have a puny effect on a regular dining-table. Moreover, the colours also have to be considered, some which are distinctly beautiful by daylight are utter failures by gas, lamp, or candlelight. What is more common than a summer exhibition table decorated with mauve or bluish Sweet Peas almost exclusively, yet this by gaslight would present a poor insipid appearance. It should be remembered also that flowers of a yellow shade of colour are not improved in appearance by gaslight, as they change to much paler shades. Lively pink, satiny rose, crimson and red colours, such as we find in roses, always light up well. No flower by candle-light is more effective than the pretty little ever-flowering Begonia Gloire de Lorraine, or the brilliant Impatiens Sultani. Orchids generally are favourite flowers for the dining-table, but none shows better under artificial light than Calanthe Veitchi. A central vase (Fig. 156), lightly filled with orchid spikes or other flowers and fern or pendent sprays, is highly attractive. White flowers, associated with greenery, have a chaste effect.

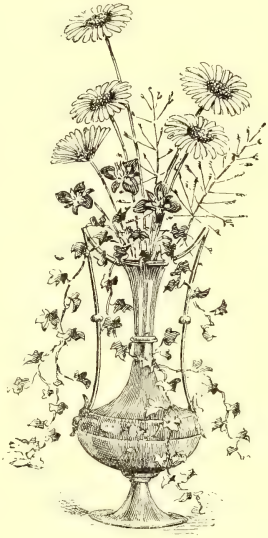
Fig. 156. Lightly-arranged Vase.

Where so many persons err, is in employing a great variety of flowers, and a mixture of colours, which spoil each other by contrast, and jar on the nerves of people with good taste, quite as much as false notes of music do on those who possess a good ear for harmony. The employment of two shades of colour that harmonise with each other, gives the greatest satisfaction, and, where the table has to be decorated many nights in succession, greater scope is afforded for changes of colour. Occasionally, ladies, when they know the colours of the flowers to be used, either adopt the same in their dresses, or avoid a glaring contrast. Autumn foliage and berries can be effectively employed, though hawthorn, barberry, mahonia, and other kinds, are not nearly so bright by candlelight as might be expected of them. Set designs, traced out with coloured leaves with berries sprinkled about them, are not now admired. This mode of decorating tables is vanishing; still an example of formal decoration will be shown on a subsequent page. What do find favour are elegant trails of smilax (Myrsiphyllum asparagoides), Asparagus plumosus, Ampelopsis Veitchi, and others of similar character, distributed lightly and gracefully among the dishes on the white cloth. All attempts at imitating pools or rivers of water, with fish, frogs, or creeping things generally, real or unreal, are best let alone.

They border on the ridiculous, and are evidences of disordered taste. Plain mirrors are bad enough as adjuncts to flowers, and quite as far as we ought to go in that direction. An arrangement of the simplest description is preferable to a poor attempt at something elaborate. Especially it is desirable that only perfectly fresh, sweetly, though not powerfully, scented flowers be used, and that the details be properly carried out, slovenly workmanship marring what might otherwise have been a complete success.

Plants are, in many instances, freely employed for table decoration, both on the score of economy and also because they associate well with flowers, and add to the general effect. The plants really suitable for the purpose are by no means numerous. They ought to be light, elegant, and of good colour—that is to say either a rich, healthy green, or brightly variegated and coloured. They must not be stiff, faulty in form, dense, or clumsy. On extra long tables for a daylight luncheon, or for long tables lit from the roof, a few tall, clear-stemmed plants of Cocos Weddelliana are permissible, and, if there is no speech-making, quite correct. Perfect little plants, 15 inches or less in height, of both Cocos Weddelliana and Geonomas gracilis and intermedia, are among the best that can be used for table decorations. Latanias and kentias, as a rule, are too heavy, though exception may sometimes be made in favour of Kentia Belmoreana. An ideal table plant is found in Pandanus Veitchi, provided the plants are smaller than shown in Fig. 157, for most tables. Crotons of the stamp of chelsoni, Weismanni, angustifolium aureum, Countess, and others with bright, slender, arching leaves, form admirable table plants, and to contrast well with them we have such Dracænas as Ernesti, nigrum angustifolium, Frederici, Alberti, and rubra. Neat, well-furnished plants of Aralias—elegantissima, Veitchi, and gracillima—are among the most beautiful table plants available. Reidia glaucescens is a singularly beautiful plant, but unfortunately a little apt to drop its leaves prematurely. Panax Victoriæ, Cyperus natalensis, and Asparagus plumosus nanus are also employed. All the foregoing are recommended for the beauty of their foliage.

Only a very few flowering plants are suitable for table decoration, including fuchsias, light pendulous begonias, such as fuchsioides, Carriéri, hybrida multiflora, Gloire de Lorraine and John Heal. Thyrsacanthus rutilans is effective as a central plant, and neat examples of Libonias floribunda and penrhosiensis are also used occasionally. Spiræa floribunda is too dense, but thin, well-flowered plants of Spiræa astilboides floribunda find favour, as also do small forced plants of Dielytra spectabilis. Bulbous-rooted plants are mostly too heavy, though exception may be made in favour of Roman hyacinths, while clumps of Lily of the Valley are even more popular. A few berried plants are suitable for the purpose in question, notably Ardisia crenulata, Solanum hybridum, and Rivina humilis. It is desirable that the plants be grown in small pots, the 5-inch size usually answering best. If in larger sizes, the chances are they will have to be turned out, and the soil reduced before they can be placed in cups, vases, or other receptacles. Ordinary moss is rarely good enough for covering the soil, and in any case is inferior to tufts of Selaginella Kraussiana prepared specially for the purpose.

What makes it somewhat difficult to lay down hard-and-fast lines as to methods of decorating dining-tables, is the fact that the circumstances and accessories in private establishments differ greatly, no two being quite alike. Fashions also change. The most successful decorator is he or she who is sufficiently resourceful to be able to utilise everything to the best advantage. When there is to be a heavy display of costly metal on the table, probably a few plants in the cups, with flowers nearly, or quite, on the cloth would be the most appropriate adjuncts. If neat little plants are removed from pots, reducing and flattening the soil, these can be set in moss on circular pieces of paper, and be alternated with dishes of fruit, in a line well clear of the space required for the comfort of the guests. From these small mounds of moss, fronds of fern, or sprays of Asparagus plumosus nanus, may radiate, and in the moss be dibbed a few choice flowers, all of one kind and colour. If space permit, larger plants and mounds, lightly covered with flowers at the base, may be disposed between cups, candelabra, or other ornaments, through the centre of the table, and a grand display be created.

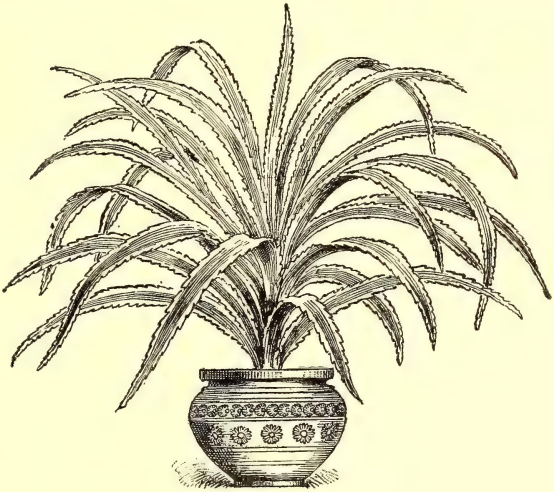

Fig. 157. Pandanus Veitchi.

Employing moss on tables does not, however, find favour with many persons, and among others, Mr. W. Roberts, Peniarth, prefers another method, of which the plan (Fig. 158), affords an example. The design is for a table to seat twelve persons. The references to the figures are as follows:—No. 1, a plant of the elegant Palm Cocos Weddelliana, and hanging lamp with shade; No. 2, four silver candlesticks with red shades; No. 3, two small plants of slender crotons; No. 4, six dishes of fruit; No. 5, six small glasses, each containing a truss of crimson zonal pelargoniums, with maidenhair fern. This would be a rich, but not overladen, table, with nothing to obstruct the view of the guests, and the effect could be varied by using differently-coloured flowers, but all should, in such case, be of the same kind. All the lines, whether straight or circular, are traced with sprigs of green box, with simple pips of crimson pelargonium inserted at intervals. This is the waning style mentioned on page 269.

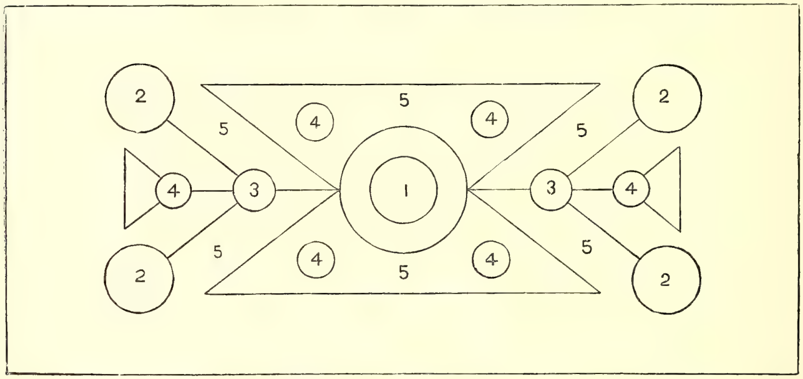

Fig. 158. Formal Design for Dinner Table.

If valuable china is to play an important part in the arrangements, the dessert dishes in this instance being raised, low bowls for plants are available; these may be arranged both between the dessert dishes and through the centre of the table. Vases for cut flowers would scarcely be in keeping with this arrangement, but the cloth may be lightly draped with trails of greenery, also roses, chrysanthemums, camellias, spikes of Orchids, with other appropriate flowers, as if carelessly disposed; or greenery could be dispensed with, and long sprays of either Bougainvillea glabra, Passiflora princeps, Stephanotis floribunda, Euphorbia jacquiniæflora, Allamanda

Hendersoni, Clematis indivisa lobata, Habrothamnus Newelli, and Tropæolums, tastefully employed. At one time semi-circular zinc and glass troughs filled with showy flowers were freely disposed round centrepieces, candlesticks, and plant vases, in various designs. At their best, these troughs were harsh, stiff, and formal, and it is to be hoped are either broken up or packed away where they will not easily be found again.

In another form of table decorating, the dessert, or a portion of it, is displayed in raised glass or china dishes; no heavy silver or other accessories are then employed, but only light, fancifully formed, tinted glass vases and other receptacles for flowers. First, however, a piece of either coloured sateen or "Liberty" silk is placed in the centre, setting a central bowl or vase for flowers on it, before puckering up the material in a fashion to resemble a "soft sea of drapery." This is bordered by trails of greenery, or sprays of flowers of a suitable colour to contrast well with the silk, while here and there either miniature vases holding a single flower or single blooms are inserted or laid in carefully among the folds of the drapery. At the corners and other spaces where there is room, other light vases, tastefully filled with flowers, are employed, and if finger-bowls are used, these also have a spray of fern and a flower laid in them. By way of a variation on this plan, squares, or oblong pieces of crimson plush, or squares richly worked with gold (usually Persian) are laid in the centre, while on and about them are arranged bowls or vases of flowers of a colour to contrast favourably with the coloured central cloth. A modification of this plan has been introduced in the shape of coloured table-cloths, squares of white damask being placed under the plates, and removed when the dessert is prepared for.

Decorations in the form of archways of flowers and greenery have nearly had their day, but the plan of arranging long trails of greenery, or greenery and flowers, from a central high vase, connecting these with either vases or candlesticks, is still practised, and, if lightly done, is attractive. Trophies of mixed fruits or fruit, flowers, and foliage, were once familiar, but now nearly dispensed with, for the simple reason that they are bound to be too heavy. It is better to display the best fruits on separate dishes, letting these form part of the design for decorating the table. It is well for the gardener, or a trusted assistant, to dish up the fruit, and if it cannot be placed on the table before the floral part of the decoration is commenced, empty dishes may be substituted for a time. In many instances, the dishes of fruit on the table remain intact, the same quality of fruit from the sideboard being handed round for use.

A cool, subdued light is proper for a dining-table, and nothing glaring should be tolerated. The electric light can be introduced effectively in various ways, and a great assortment of large or small lamps, with shades, are also available; but, all things considered, silver or gold branched candlesticks, with wax candles and shades, afford the best means of lighting. A soft light is cast on the table, leaving the rest of the room darker, to mask the movements of the attendants. Nothing in the way of decoration will show above a certain height, and those tall "March" glasses, or epergnes, so dear to the exhibitor, would be utterly wasted on a candle-lit table. Nothing tall ought to be placed on the average table, or anything heavy or obstructive; no confusion and no glaring contrasts should be the rules that guide decorators.

VASES AND EPERGNES.

Vases and epergnes for flowers are provided in extraordinary variety. Some are well adapted to the purpose for which they are designed, but the majority are more or less ornamental in appearance and difficult to fill satisfactorily. Some are simple dishes, which have either to be packed solidly with flowers, or moist sand has to be used, which means an early collapse of flowers and greenery. Others are mere tiers of tiny bowls in which none but the lightest flowers can be seen to advantage, while the more recent introductions, rustic patterns made principally of tinted glass, are only fit for the dining-table, as they hold such a small quantity of water and few flowers. The "March" stands or epergnes of flowers, ferns, and grasses (Fig. 159), are suitable for drawing-room and other tables, when there are abundance of flowers and they are properly arranged; the top of the one figured is a little too "dumpy." Too few flowers are often seen falling about in the flat base, while pendants and central glasses are packed too lightly with flowers and greenery.

For producing an imposing effect nothing equals well-filled trumpet-shaped vases, and in their absence celery-glasses form a good substitute. These forms hold abundance of water, and, as they stand firmly, can be filled with long-stemmed heavy flowers, such as arums, amaryllises, small gladioli, sunflowers, dahlias, and chrysanthemums. In order to arrange these heavy, long-stemmed flowers lightly and pleasingly, it is necessary, in many instances, to fill the bowls with short lengths of stems and leaves of the kind of flowers used, or with branches of tree-box, and the stems of the flowers being inserted among them, remain fixed in the position required. For roses, carnations, sweet peas, narcissi, tulips, and moderately heavy flowers generally, smaller vases are more suitable.

Mixtures of different kinds of flowers ought to be avoided, as a rule. A change can be given by occasionally employing varieties of one kind. Sunflowers, both annual and perennial, are best kept by themselves, and in any case only the miniature varieties should be mixed with other flowers; gladioli are also too heavy to properly mix with other kinds of flowers, and the same may be said of large chrysanthemum blooms. These are not so much sought after as formerly for rooms, but if cut with a good length of stem, well-furnished with healthy leaves, and arranged thinly in large trumpet-shaped vases, they are effective.

The greenery used in these large vases must also be of a somewhat bold description. Nothing is better than the foliage of the kind of flowers employed. This can sometimes be cut from chrysanthemums, roses, dahlias, and carnations, while the stronger grasses, common asparagus, and sprays of evergreens are usually available for the rest. A mixture of carnations and Gypsophila paniculata is pleasing, and sprays of the last-named plant associate well with sweet peas. From the beds of seedling carnations abundance of buds, from a few single-flowering varieties, can usually be cut, and these should be mixed freely with the flowers. Buds and shoots of Cactus and other dahlias ought to be cut or mixed with the blooms. Narcissi, daffodils, tulips and hyacinths are greatly improved in appearance by having their own leaves mixed with them, a fact so fully realised that forced daffodil leaves are now supplied in bundles by the market growers around London.

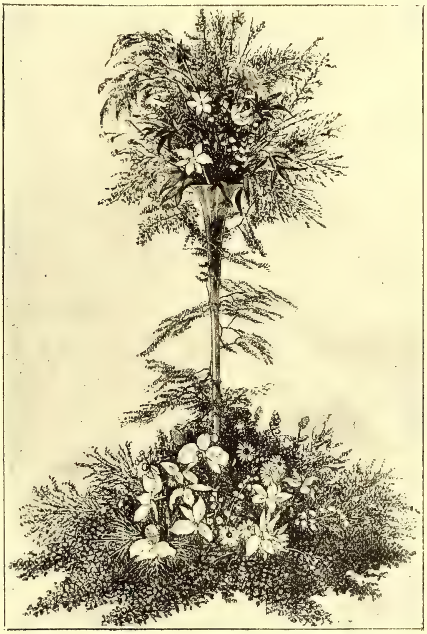
Fig. 159. Stand of Flowers, Ferns, and Grasses.

Small-necked or trumpet-shaped glasses are to be preferred for holding single specimen roses, lilacs, small chrysanthemums, Malmaison carnations, a few spikes of Lily of the Valley, sprays of stephanotis, gardenias, greenhouse rhododendrons, and other popular flowers, whether these are required for the dining-table, boudoirs, or mantelpieces. Tiny fish globes are also suitable for a similar purpose. Bold, plain vases are better for holding several flowers, but these should not be crowded nor mixed with the foliage of other kinds of plants. Flimsy tottering glasses, that hold very little water and are easily upset, should be avoided. The leaves of the flowers used, maiden-hair fern, sprays of African asparaguses, and Aquilegia adiantioides, are the best in the way of greenery for these small vases.

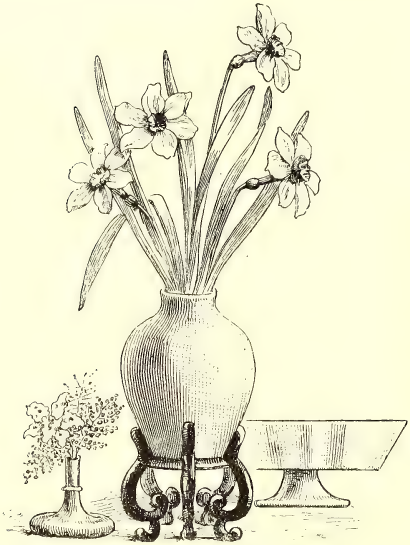
Fig. 160. Flower Vases.

Large flat vases are employed for displays of Roses, and the second tiers of epergnes have to be filled with damp silver sand before they can be made to hold flowers properly. In these, choice short-stemmed flowers may be arranged in mixture, so long as there are no glaring contrasts, with long fern fronds or sprays of asparagus setting well over the edge of the dish, and more greenery interspersed among the flowers. Dipladenias, allamandas, gloxinias, azaleas, water lilies, and a great variety of other flowers, can be used with good effect in these shallow receptacles. In the second tier and branches, flowers of a light, pendulous nature, and sprays of orchids, can be attractively arranged. Only a few are needed for the glasses. Sprays of pendulous fuchsias, begonias, abutilons, and thyrsacanthus, with a single flower or truss, as the case may be, of pancratium, gloriosa, ixora, bouvardia, plumbago, gloxinia, authurium, and clivia, or about three cyclamens, strepto carpuses, sweet peas, and other comparatively small flowers, with some light fern and grasses, and trails of very small ampelopsis, or the best substitute for the same, are usually enough for the hanging baskets or cornucopias. For the central trumpet, flowers in long spikes are suitable, such as of francoa, spiræa, larkspur, euphorbia, gesneria, and amasonia, arranging them lightly with tall grasses, a few fronds of light fern, and some elegant trails. Those who compete for prizes mount pips of tuberose, stephanotis, agapanthus, and other small, short-stemmed flowers, on wires 6 inches to 9 inches long, and dot these about the vases and epergnes, but such temporary additions are not suitable for every-day arrangements, the "wired" flowers lasting fresh a short time only.

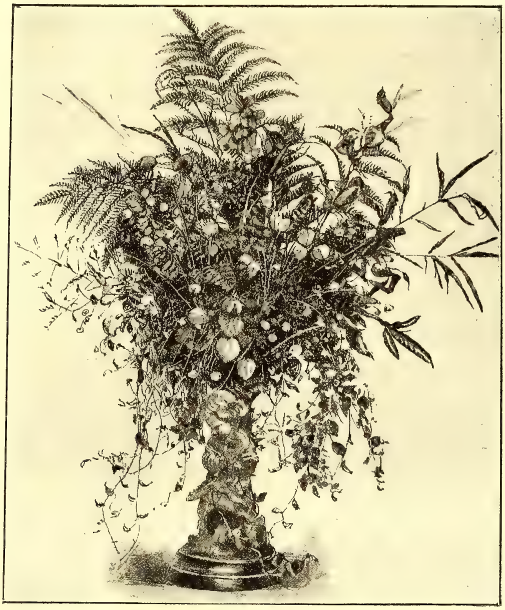

Fig. 161. Autumnal Stand of Berries and Foliage.

French baskets with a high cross handle, and fitted with a tin for holding water, and a cover of half-inch mesh netting for holding or steadying the flowers, or failing this moist sand, can be tastefully filled with flowers for either a table or exhibition purposes. The handles may be covered lightly with trails of smilax, asparagus, virginian creeper, elegant ivy, Ficus repens, Selaginella cæsia arborea, Lygodium scandens, stephanotis in flower, or other trailing plants, and may further have a bow of satin ribbon attached to one side, of a colour to blend or contrast well with the flowers in the basket; but too much ribbon is often employed. These baskets can be effectively filled with bold flowers, with long stems, such as roses, Cactus dahlias, Malmaison carnations, chrysanthemums, cattleyas, and odontoglossums. Pedestal stands (Fig. 161) are also furnished with autumn foliage, berries, grasses, and ferns, and beautiful effects produced. The grasses ought to be collected before the seeds are ripe, tied in bunches, suspended in a room and dried. Hedgerows in October and

November provide nearly, or quite, all the rest. In this instance no water is required, only firm, damp sand, and a basket boldly, yet lightly, filled will retain its beauty a considerable time.

Flowers and greenery ought not to be unduly exposed to either drying sun and air or cold winds, or be kept out of water longer than can be helped. The best time to cut them is in the morning, while perfectly fresh, and, in the case of those in the open, with the dew on them. The majority will keep fresh the longest if cut just before fully expanded. Roses ought only to be well advanced in a bud state when cut. Narcissi and tulips, when placed in water, develop from the bud state; and a few other flowers, including cattleyas, advance similarly. Rhododendrons, lilacs, azaleas, and other kinds, with hard or woody stems, fail to draw up water freely, and are consequently the first to wither. In every case, flowers cut with a sharp knife are found to draw up more water, and to last longer than those broken off, or even cut with plant scissors, which close some of the sap vessels. Some flowers exhaust the water in vases quickly, the supply having to be renewed every day. If flagging prematurely, either by want of water, or after a long journey, they recover the most quickly by cutting off the ends of the stems, and placing in clear water, heated to a temperature of 100° to 120° Fahrenheit. Water in many kinds of vases soon becomes putrid and unfit to be kept in a living-room. Nor does changing the water once a day always meet the case, and it is well, therefore, to add a pinch of common salt and a few nodules of charcoal for keeping it sweeter and benefiting the flowers. Sand needs changing every three or four days, as this also soon becomes unsavoury. There should be no leaves on those parts of the stems of flowers that are inserted in water.

CHURCH AND OTHER FESTIVALS.

Decorations of various kinds form important items in the preparation for the principal Church Festivals, as well as public and private functions, such as banquets, balls, and concerts. We have broken away from the heavy style that found favour with former generations, and it is to be hoped the tawdry, cheap, paper flowers and hangings have also had their day. If real flowers are out of the question, then be content with festoons, groups of evergreens, and bunting, for open-air decorations, as well as large public halls; but employ evergreens with natural flowers, and plants for churches and private halls. In every case the decorations ought to take the form best suited to the building and the materials available, and only a few general hints can here be given.

Churches.

Christmas is, perhaps, the most important festival of the year with the majority of church decorators. Time was when no other festival was honoured to a similar extent, but Harvest Festivals are now generally recognised, and the decorations are often elaborate. In some churches, Easter would appear to be regarded as the chief festival, while Whit Sunday and various Saints' days are also florally celebrated. This adds not a little to the prosperity of florists, and also, it must be said, to the discomfort of a considerable number of private gardeners, who object to cutting flowers so freely for these purposes.

The old-fashioned plan of decorating the churches at Christmas consisted largely of forming for the pillars wreaths of ivy, berried holly, and other evergreens, with still heavier festoons between the arches. In the corners were placed masses of common laurel or other evergreens, all of a serviceable nature and remaining for six weeks. Decorators have recently gone to the other extreme; and when the wreaths, emblems, and festooning is done with extreme delicacy, like so much millinery, it is doubtful if the method of our forefathers was not the more effective. The larger structures should have moderately heavy, closely-made wreaths of ivy, yew, laurustinus, variegated and berried holly for the pillars, to which festoons also drape from the centres of the arches, and in the outside corners fairly large masses of evergreens would still be appropriate. Ladies do most of the church decorating nowadays, and making wreaths in long lengths is not to their liking; the work also absorbs large quantities of material. All the same, it is better than stitching leaves to coloured flannelette, or whatever is used, or sticking tiny sprays where branches are more to the purpose. Holly plays such an important part in church decoration that it will not be inappropriate to depict a few effective varieties for planting. (Fig. 162, next page.)

The most modern idea is to decorate churches largely with natural flowers in certain colours, renewing them, if needed, with a view to keeping them in a fresh state for the octave. For Christmas, the correct colours are red, yellow, and white. "Raspail geranium" and poinsettias are principally used for red; W. H. Lincoln chrysanthemums for yellow; Lady Lawrence and Princess Victoria chrysanthemums, arums, Roman hyacinths, and Paper White narcissi, principally for white. With these, adiantum and pteris fronds, sprays of asparagus, and cupressus are associated. The flowers show

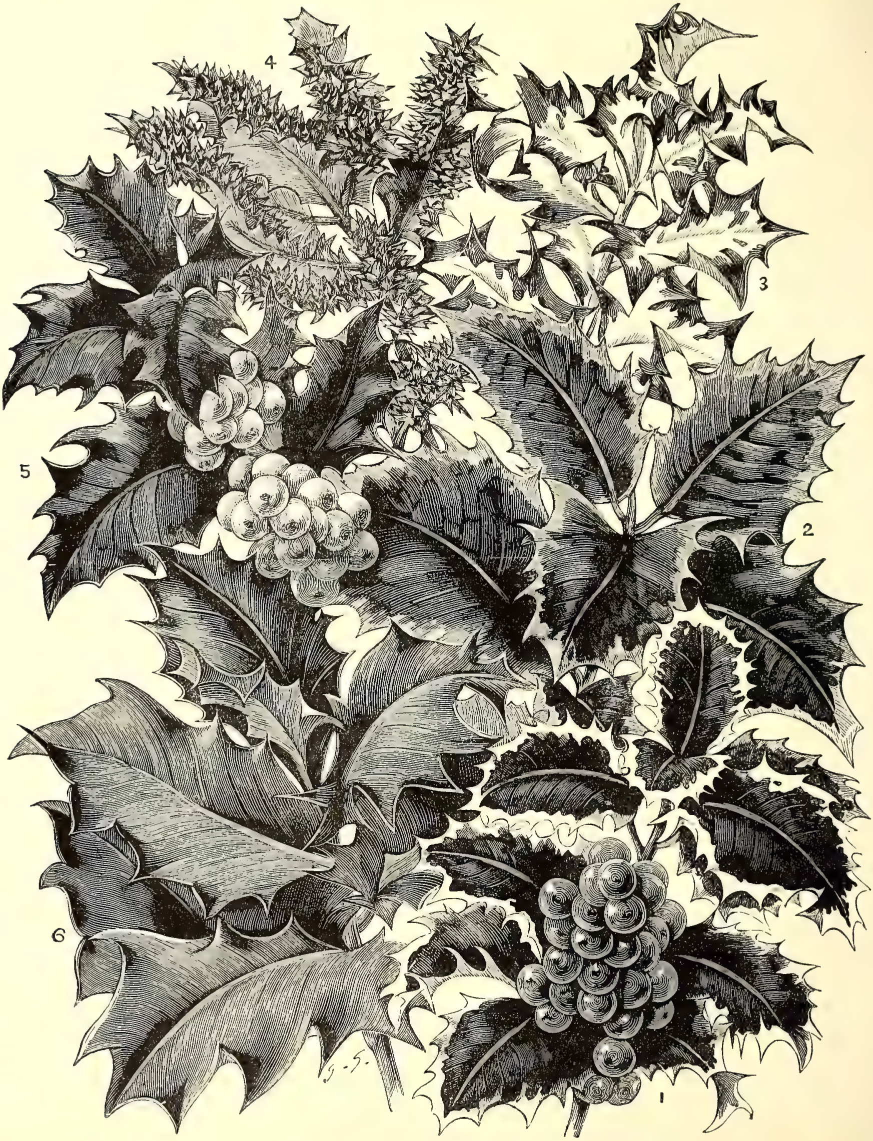

Fig. 162. Hollies.

References.—1. Silver Queen; 2. Golden Queen; 3. Milkmaid; 4. Hedgehog; 5. Yellow-fruited; 6. Hodgins' large green-leaved.

to the greatest advantage on gas stands and the old-fashioned branching candlesticks. Small-pointed pockets, made of zinc and painted a dark green colour, are made and supplied specially for holding flowers in these positions, in sufficient water to keep them fresh for a few days. Some of the greenery should drape downwards, and the flowers must not be packed too neatly or tightly. The standards of gas-brackets or candlesticks would be further improved by having trails of ivy twined round them. The free use of long trails of ivy is quite the redeeming feature in many too neatly decorated churches.

Flowers, coloured foliage, fern fronds, and grasses, are frequently employed with good effect in the decoration of pulpits and fonts. If flowers are scarce at Christmas a wreath, neatly formed with small sprays of mixed evergreens, may be fixed under the top edge of the pulpit, and another at the base, while a cross or other emblem can be placed in each panel; not, however, if this means obscuring beautifully carved figures. Sometimes pulpits are festooned with evergreen wreathing, but on no account ought artificial or paper flowers to be used in connection with this or other form of church decoration. These tawdry substitutes for real flowers are largely employed in churches on the Continent, but should not be tolerated in this country. In churches where flowers are forthcoming, the lower rim of the pulpit is fitted with tin troughs, deep enough to hold water, with more troughs or pockets taken half-way up the columns, and when tastefully filled with flowers and greenery a good effect is created. Flowers have been mentioned for Christmas decoration. At Easter, white flowers are preferred, and the correct colour for Whitsuntide is scarlet. For Harvest Thanksgiving, Cape gooseberries, barberries, bright flowers, coloured bracken and corn are effective. At the base of the pedestal of a pulpit, various offerings in the form of corn, fruit, vegetables, and plants are frequently grouped.

Fonts vary greatly in design. Some lend themselves well to tasteful decoration, and still more do not. They may be wreathed and festooned similarly to pulpits and a tall cross of white flowers set up in the centre is appropriate. Banks of moss, with here and there small groups of flowers, or neat plants, with ivy trails taken up the pedestals are suitable for beautifying the base. If there are covers to the font, these may be mossed over, where this can be done with effect, white flowers and fern fronds being grouped at short intervals. It is a mistake to fill uncovered fonts with plants or greenery.

In the chancel there is frequently scope for decorating work. The screen itself may be lightly wreathed, while the ends of choir stalls can be furnished with banners or evergreens, and the gas-brackets or candlesticks be treated similarly to those in the aisles of the church. Sometimes the altar rails are wreathed with evergreens, with pockets of flowers at each standard, but this is not a High Church practice. Altar vases as usually seen, have flower holders of an oval shape, fitted with tubes, and the correct practice is to fill these somewhat closely, all the flowers facing outwards, with a margin of fern. If two colours of flowers are used, one may encircle the other, or one colour, say red, may be arranged in the form of a Greek cross, filling in the spaces between and encircling with white flowers; general mixtures are wrong. In High Churches there is no other altar decoration needed, or possible in many cases; but where there is no reredos, and only bare walls and sloping naked window-sills, much more may be done with advantage. The window-sills should be covered with fresh moss, and have groups or crosses of white flowers and fern fronds laid on it. Ivy trails may be taken up the stonework of the window.

Other sloping window-sills should be decorated in a similar manner, substituting coloured flowers for white. Where the sills are flat large vases or jars may be arranged, filling them boldly with long-stemmed flowers, branches of evergreens, and hardy fern fronds.

At Whitsuntide in many churches the gas-stands are decorated with large branches of birch in leaf, and this is also freely used around heavy pillars, in various corners, but not about the altar, pulpit, lectern, or font, where red flowers are correct. This birch decoration is very effective. For Harvest Thanksgivings corn ought largely to take the place of flowers and evergreens, especially in positions where somewhat heavy decorations are desirable. Small sheaves, with some fruit or vegetables at the base, are appropriate for the window, and larger sheaves and fruit at the base of the pulpit and other open spaces. The Winter Cherry (Physalis Alkekengi) mixed with flowers and corn looks well on the pulpit. Floral archways are sometimes formed for such festivals, and for wedding ceremonies, these showing to the best advantage in churches where there are no chancel screens.

Although plants have not, as yet, been mentioned in this connection, it is not because their value for church decoration is not rated very high. On the contrary, plants give the finishing touch to the other work; but not, as sometimes seen, in dirty pots too large for the purpose, arranged conspicuously in the windows. Better no plants at all than thus employed. A moderately large well-grown kentia, or other palm, on each side of the chancel entrance, or groups with the pots covered with moss, or plants of tree box in a similar position, are decidedly effective; and we sometimes see plants in the corners, outside the rails, on the steps leading to the altar, in front of reading desks, lecterns, at the base of pulpits, and other positions where there is room for them to be arranged without inconvenience.

BALLS AND CONCERTS.

Bare walls of large rooms should be festooned with evergreens, and draped with banners, a wreath of evergreens all around the top beading giving a good finish. Neatly-made wreaths may be also taken from each corner, and from midway down the sides to the centre chandelier, or if there be two or more chandeliers in a long room the wreathing may be draped from one to the other. Whether the chandelier shall also be decorated with evergreens, ought to depend upon its construction, or whether it lends itself to decoration or not. Balconies may be either festooned or draped with banners,

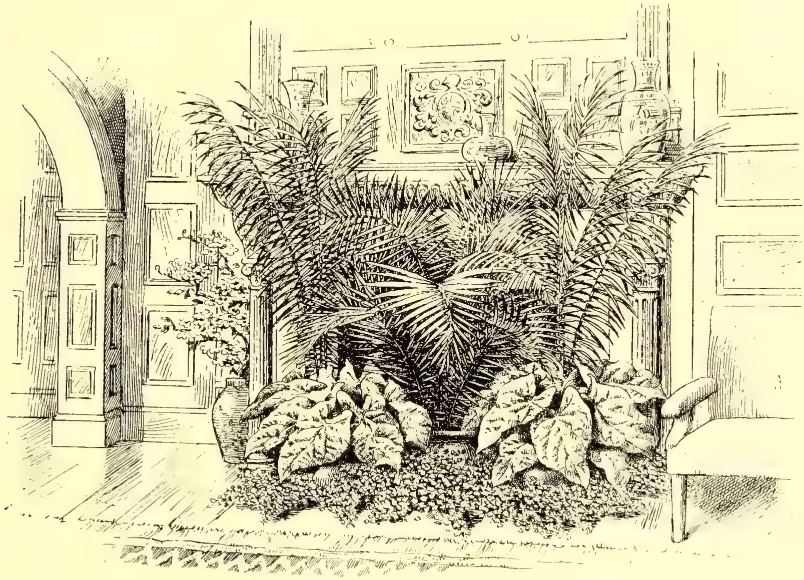

Fig. 163. Summer Fireplace.—Date Palms and Caladiums.

and if there is head room a few tall palms will show to advantage, as well as at the back of the band-stand, and in the corners of the room. The fireplace, when not in use, is a good position for a group of palms and foliage plants (Fig. 163), the pots being obscured by trailing plants or moss, in which small vases, holding a few choice flowers, can be inserted if desired. On the mantelpiece may be arranged a front row of maiden-hair fern, in small pots sloping to the front, and at the back neat fine-foliaged or flowering plants. The approaches and reception rooms may be treated as advised under the heading "House Decoration," and the supper-tables furnished with plants and cut flowers as for a dinner-party.

For concerts little is done in the way of festooning, but banners are frequently requisitioned, and plants largely employed. If only a limited number of performers are engaged, and the platform is fairly large, a row of well-grown plants in covered 5-inch or 6-inch pots may be arranged next the footlights, taking care to keep well clear of them. If there is room, one suitably sized plant or a small group may be disposed at each end with advantage. A tall palm at the back, and slightly overhanging the piano, looks well, but should not incommode the performers. At the back of the platform a tall central hanging mirror, draped with muslin, with either a tall kentia, seaforthia, or other well-grown palm, or a narrow group of somewhat tall plants, has a good appearance. This might be varied by a central group of plants, and narrow hanging mirrors on each side of it, draping coloured muslin from the centre, so as to enclose and hang down on the outer side of the mirrors. In one of the wings, or between the platform and wall, there is often space that has to be curtained off; in front of the curtain there may be room for one or more plants, nothing showing to greater advantage than tall palms and ferns, as comparatively small plants are scarcely seen in such positions.

COMMERCIAL FLORICULTURE.

Of late years growing flowers and plants for the markets has developed into a great and flourishing industry, the outcome of enterprise which has led, rather than followed, the steadily increasing demand for luxuries of this description. As a nation we are great admirers of the beautiful gems of nature as developed by the art of man, and the abundance as well as cheapness of plants and flowers available is largely responsible for the greatly increased demand for them. Homes unadorned with cut flowers and plants present, to refined minds, a desolate appearance, and it is for the benefit of all that the taste in this direction should be fostered in every possible way. The fashion, also, of sending memorial wreaths, crosses, and other emblems to friends during periods of grief, has done much towards stimulating the growth, more especially of white flowers, while immense quantities of both plants and cut flowers are employed in a very different manner, namely, the decoration of dining tables, also, as previously indicated, ball-rooms and churches.

It is worthy of note that the great demand for tomatoes has done much towards largely increasing the number of flower growers, thereby cheapening the commoner flowers to such an extent as to render their cultivation scarcely profitable. Something has to be done with the houses during the autumn and winter months, and they are filled with such plants as chrysanthemums, arums, zonal pelargoniums, carnations, narcissi, daffodils, tulips, hyacinths, and other kinds. Mild autumns, however, have rather upset the calculations of growers of chrysanthemums in particular, prices ruling exceptionally low owing to the abundance of those and other flowers in the open-air. This over-production benefits the retailer more than anyone else, and brings flowers within the means of everybody, even if the supply is not always remunerative to the producers.

Market growers must be up-to-date, not only as regards the classes of plants and flowers they cultivate, but also in their methods of production. Fashions and fancies have to be kept pace with and even anticipated. It is not what ought to "take," but rather what the general public are "gone on" that should be grown. It is the fashionable flower that sells the most readily, and, it need hardly be added, pays the best. Happy the few who are the first to be in the market with a good supply of the novelty that has come to the front; but they must make their mark while yet they have a partial monopoly of the secret, for it is certain it will not be long before hundreds of rivals will be contributing their quota to the supplies—prices quickly dropping accordingly.

Specialities pay better than general mixtures. Thus if a man is an expert in carnation culture he ought to make that a speciality, not necessarily devoting all his talent and energies towards producing this popular flower in large quantities, but making that his principal feature. The time will soon come when he will have made a reputation for carnations, and instead of sending his flowers to commission salesmen, he has to dispose of orders, which will probably be received from various directions for all that he has to sell. Not merely is this much the more profitable method of distribution, but the carnations help to sell various other flowers that the same grower may provide.

Similar remarks apply to a few other specialities. Roses are always in demand, but it is not given to all market gardeners to be able to produce them in a saleable condition in profitable quantities. Lily of the valley can be grown finer in some nurseries than others, and a good reputation for lilies pays. Cyclamens are even more difficult to grow to perfection, and the few cultivators who excel in their production must reap a golden harvest, as cut blooms, plants, and seeds, all sell at remunerative prices. Many florists are glad to know where they can procure a few dozen arums quickly and somewhat cheaply, and those growers who contract to supply this class of flower regularly at a fixed and apparently low price all through the season, find it pays better than sending their blooms to the markets, where the prices fluctuate so much. Remember that various other flowers can, at times, be "worked in" with the arums. A reputation for violets is profitable to its possessor, and thanks to present Parcels Post arrangements, sweet English-grown violets can be sent in fairly large quantities to any part of the kingdom for a few pence. They are altogether better than the imported flowers, temporarily scented in chemists' shops.

The fragile nature of eucharises, pancratiums, gardenias and liliums, militate somewhat against these flowers as specialities; but those who can both grow and pack them successfully must find them profitable. It is the commoner, more easily-grown flowers with which there is most competition. Among orchids, the supply of the larger kinds of Cattleyas and others is apparently equal to the demand; but as a speciality, Odontoglossums, more particularly the cool-house section, also Dendrobium phalænopsis

Schröderianum, if cultivated extensively and well, as is done by a few Continental growers, must prove highly remunerative. Maiden-hair fern was at one time a profitable speciality, but this is being largely superseded by Cape asparagus, notably A. plumosus nanus and A. Sprengeri, both of which may be extensively grown with advantage. Palms, ferns, small conifers, shrubs, and bedding plants, are all profitable specialities.

Market growers cannot afford to indulge in fads of any kind. What answers well in private gardens is not always advisable when commercial floriculture is substituted. It is not a question of growing dozens of plants, but rather of thousands, and for the commoner kinds of plants not much fibrous loam, peat or sand should be bought, or even many flower pots washed. Such items add greatly to the cost of production, and cannot be afforded in these days of fierce competition. Soil has not to be obtained by a few barrowfuls, but many cart and waggon loads are required in numerous instances. The market grower, as a rule, has to be content to dig ordinary poor loamy soil from his freehold or holding, adding leaf soil if procurable, partially decayed horse-droppings, charred soil and refuse, mortar rubbish, and even ashes to insure porosity. For choicer kinds of plants the more orthodox mixtures recommended earlier in this work are necessary, and the specialist then spares no expense in soils, clean pots, or any other requisite. A good supply of soft water may be advantageous, but hard water is not such an unmitigated evil as many gardeners seem to imagine: at any rate, large quantities of cut flowers and plants of the best quality, supported by hard water, are placed on the markets—such plants that many private gardeners, with soft water at command, would be glad to produce.

STRUCTURES.

Nurserymen pure and simple favour structures designed solely for the production of pot plants in the best condition possible. Not so the average flower grower. Only specialists can afford to devote their houses to plant-growing all the year round, and the great majority, as previously intimated, utilise their structures during the summer in the production of cucumbers, tomatoes, or other saleable crops. In many cases the flowers and pot-plants generally are only regarded of secondary importance, and grown rather than have empty houses during the late autumn and winter months; this plan, moreover, affords employment for men who would otherwise have to be discharged, with the certainty that they would not again be forthcoming at the time when most wanted.

Luckily, the types of houses that are most suitable for the production of fruit or "fruit-vegetables," are equally well adapted to the growth of pot-plants. The market-growers' brick-sided houses may not at first sight appear suitable for the growth of flowers; but owing to the comparatively small amount of wood employed in their construction, these houses are remarkably light and prove congenial to plant life generally. Low, span-roofed houses, 12 feet to 14 feet wide, with a height of 8 feet to 9 feet in the centre—measuring from the door sill—with or without sunken paths, and arranged in blocks (see Fig. 164), with brick sides and either wood or brick divisions, or no divisions at all, are largely utilised for cucumber and early tomato culture, training both kinds up the roofs, and in these many kinds of plants may be profitably grown. For cucumbers, six rows of hot-water pipes are needed, two more than required for tomatoes, and it is in the cucumber houses that gardenias, eucharises, spiræas, tuberoses, bulbs generally, lily of the valley, roses, Azaleas indica and mollis, and other shrubs, including lilacs, may be most readily forced. In the 14-feet wide houses, in which gentle heat only is maintained, cyclamens, arums, double zonal pelargoniums, bouvardias, double primulas, liliums, freesias, palms and ferns may be grown. In others of a similar description, with fire-heat turned on when necessary to expel damp or exclude frost, chrysanthemums, carnations, mignonette and Easter flowering bulbs may be arranged.

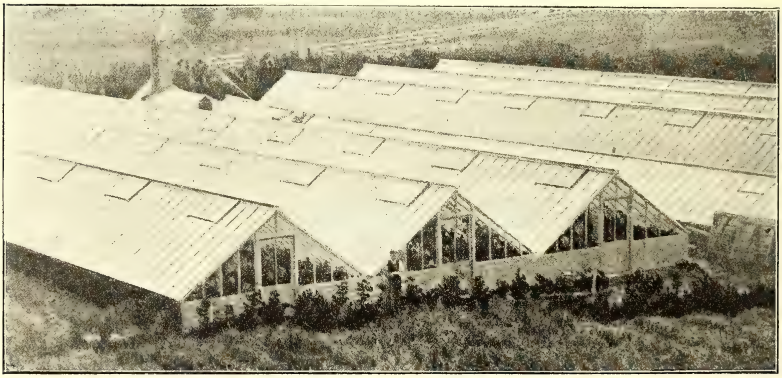
Fig. 164. Market-grower's Houses.

Still larger heated, span-roofed houses, with glazed, ventilated sides, and which suit tomatoes, peaches and grapes so well, can be profitably filled with chrysanthemums to flower at Christmas. An example of such a house is shown in Fig. 165. The outside walls are good positions for shallow pits, as shown in the illustration. If these large span-roofed houses, which are from 18 feet to 24 feet in width, are furnished with not less than six rows of 4-inch hot-water pipes, they would answer well for arums during the winter, and also for the growth of palms in 6-inch and larger pots. Some of the growers of palms on a large scale have constructed extra large ridge and furrow houses, supported by iron archways under which the pathways are taken. In some instances a single structure covers half-an-acre or more of ground, with no glazed or other divisions. With arched supports, instead of either single iron standards or walls under the gutter boards, pathways run along where divisions are formed in the older style, and thus economy is effected all round.

When exposed to much heat and moisture wood of any kind soon perishes, and where raised stages are provided, with hot-water pipes underneath, the framework should be of iron, covered with galvanised iron sheets or slates covered with ashes for the pots to stand on. A dry, heated temperature does not suit palms, and they thrive best in large structures, fitted as described, with abundance of moisture about them. Provision ought always to be made for excluding strong light and sun: growers desiring to produce comparatively tall plants quickly and to sell them before the lower leaves are lost. They would thrive well under thick rolled-glass, but this is more expensive than suits the pockets of market-growers, and the ordinary best 21-oz. Belgian glass is usually employed. Blinds are also somewhat expensive, though the best form of shading. If these are employed, they would last much longer if a box along the ridge were provided, under which they could be rolled. In some instances, a frame-

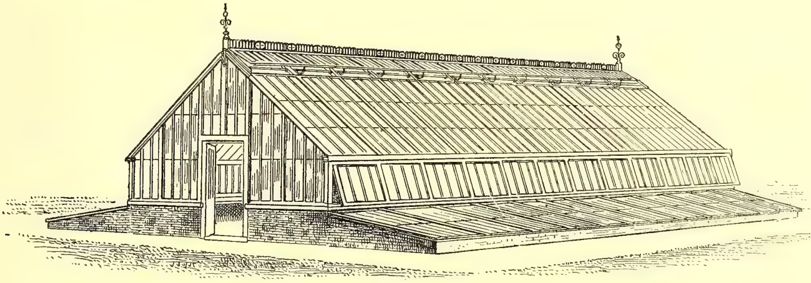

Fig. 165. Large Span-roof House and Glazed Pit.

work of gas-piping is employed, with good effect, for supporting the blinds well above the glass.

Ferns require more light than palms, and if grown in too much shade they become drawn and unserviceable. Somewhat flat-roofed houses appear to suit them best, as the atmosphere is not so breezy and dry as in houses with sharper roofs. The same remarks apply to cucumbers, and not a few growers transfer large numbers of ferns from thumb pots into the 4-inch or 5-inch sizes in time to closely occupy the warm beds or benches just previously cleared of summer cucumbers. A well-heated structure is shown in Fig. 166, and as the beds or benches do not go flush to the side walls, the soil and atmosphere are warmed by the same pipes. Side lights, however, are not necessary for either ferns or cucumbers, and the roof may rest on walls a foot or so above the bed. Houses constantly devoted to fern culture ought either to be fitted with blinds to use during hot weather, or else be heavily shaded with "summer cloud" or other green preparation.

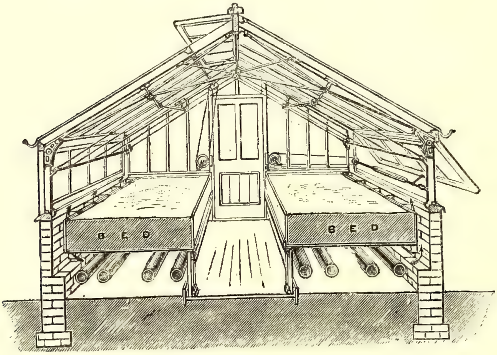

Fig. 166. House for Raising Plants.

For forcing Lily of the Valley crowns strong bottom heat is indispensable. The hot-water pipes provided for propagating frames, or for early cucumbers, may be utilised for this purpose, arranging the pots or boxes immediately over these, enclosing them in a frame kept darkened till growth is advanced. Bedding plants, notably "geraniums," are most surely wintered on suspended and other light shelves, which can be temporarily provided in houses after these have been cleared of tomato plants in the autumn. Cyclamens, primulas, cinerarias, mignonette, and other plants of that character are kept in a healthier state when arranged on stages, but there is no necessity to go to a great expense in providing them. Temporary stands may be formed with the aid of large inverted flower-pots, or glazed drain-pipes, to support cross-bearings of 3-inch quartering, to be covered with deal boards, slates, or sheets of galvanised iron.

In low forcing-houses where the paths are sunken, a brick wall on each side of the central pathway to a height, say, of 3-feet, or rather more, according to circumstances, should be formed; this keeps the bed of original soil from breaking away, and forms a good foundation for either cucumber, melon, tomato, or pot plants generally. A single bottom-heat pipe in the centre and just below the level of each bed would prove serviceable, the top-heat being provided by a flow-pipe along the back, and a return just inside the wall on each side of the pathway. Sometimes the return pipes are arranged on the top of these walls, but if inside the top course of bricks they can be enclosed by a frame at any time and extra heat for forcing provided.

It is false economy to fix too few hot-water pipes. If, in order to obtain a desired temperature, or to exclude frost, it becomes necessary to fire very hard and to make what few pipes there are very hot, this is expensive as regards fuel, trying to the apparatus, and most injurious to any plants subjected to the parched atmosphere that prevails while the pipes are thus overheated. There ought always to be ample boiler power and sufficient piping to obviate any necessity for keeping a fierce heat anywhere.

METHODS OF CULTURE.

Nearly, if not quite all, the plants to be alluded to in this section have been treated upon in the earlier pages of this work, and where fuller cultural details than will here be given are desired, they may be obtained by referring to the index. As many practical hints as possible will be conveyed in a brief form, market growers not caring to wade through any lengthened descriptions or elaborate cultural details. Only the more popular kinds of plants will be included, or those that pay well, either to sell in pots or to afford flowers for cutting.

ARALIA.

Aralia (Fatsia) Sieboldi is the species largely grown for the markets, only a limited number of the variegated form, A. S. variegata, being distributed, owing, partly, to its being less easy of propagation. A thousand seeds of A. Sieboldi can be purchased for 1s. 6d. The seed should be new, and is usually obtainable in April. Old seed does not germinate satisfactorily. Sow thinly in pans of light sandy soil, place in gentle heat, cover with squares of glass, and keep the soil uniformly moist and shaded till the plants appear. Raise the seedlings well up to the light, and before they crowd each other move them with the point of a label, and place singly in thumb pots, using light loamy soil. Return them to gentle heat, afford shade from bright sun, and before the plants become root-bound, shift them into 5-inch pots, employing a fairly rich loamy compost. They may be kept in gentle heat till well established, but there must be no hard forcing, as only sturdy, well-furnished plants find a ready sale. Strong plants in 5-inch pots ought to fetch 50s. per 100, and if shifted into 6-inch pots and grown considerably larger, they are worth 12s. to 15s. per dozen. The variegated form is propagated by root cuttings, or short lengths of the larger roots inserted in pans of sandy soil placed in a temperature of 75° to 80°. These soon form fresh roots and leafy growth, after which they may be treated similarly to seedlings, but they ought to have a peaty soil. Strong plants in 5-inch pots are worth 15s. to 18s. per dozen. All ought to be hardened before they are sent to the markets or exposed for sale.

ARUMS.

Enormous numbers of the pearly-white spathes of the "Arum Lily" are sent to the markets, and they must pay for cultivation or so many would not be grown. Those who can arrange to supply them regularly, from September to Whitsuntide, at a fixed price of 3s. per dozen, ought to be satisfied with the results each season. It is true, the market prices, at times, touch 7s. or more per dozen, but it is equally certain they drop to 1s. 6d., especially when most plentiful, or during the spring. The only profitable variety, as yet, is the old Richardia æthiopica. The miniature variety, Little Gem, has proved an utter failure for market, while the yellow forms, R. Elliotiana and P. Pentlandi, though very beautiful, are expensive to stock, flower late, and have yet to prove their worth from a market-grower's point of view.

Two methods of cultivating Arums find favour. That most often recommended consists of resting the plants after flowering, by withholding water to the extent of causing the tops to die down. In June or July they are watered, and when starting afresh are shaken clear of the old soil, divided, and re-potted. Single strong crowns are placed in 6-inch pots, extra strong ones in 7-inch, or three or more into 10-inch or larger sizes. The smaller suckers are either placed by themselves, three in each 7-inch pot employed, or, if the stock is large enough without them, they find their way to the rubbish heap. A fairly rich loamy compost is used, and the plants duly arranged on a bed of ashes in a sunny position in the open air, kept well supplied with water, varied later on with liquid manure. When housed, about the middle of September, the plants ought to be showing flower spikes. Fig. 167 shows arums as grown in one of the houses represented on page 288.

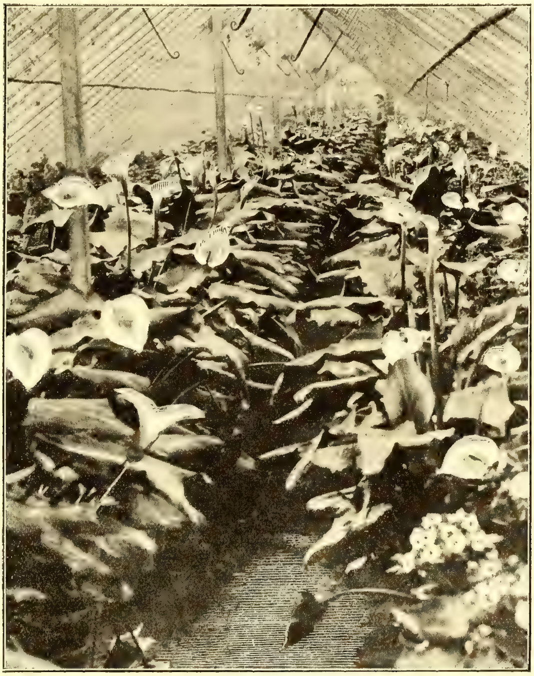

Fig. 167. House of Arums.

The other plan, and which answers remarkably well, is to rest the plants after flowering, and early in June divide and plant out singly on a breadth of moderately light, free-working ground that was manured for some previous crop. Very stiff, lumpy, or newly-manured ground is not suitable, as the plants do not all move well from it. Trenches prepared as for celery are quite a mistake. Plant the single crowns, the strongest, 15 inches, and the rest 1 foot apart each way, just burying the crowns. Give water to settle the soil about the roots, and mulch with long, strawy manure. During a very dry, hot summer, water may be given two or three times with advantage, but during the average summer none need be applied. By the end of August, flowers should be showing on many of the plants. All ought to be carefully lifted not later than the second week in September, saving as many roots as possible with some soil about them. Place them singly in pots large enough to hold the roots without unduly cramping them, or two or three strong plants may be placed in a 10-inch pot, a plan that is preferred when cut blooms only, not plants, are marketed. After potting, arrange the plants outside, in a convenient position for housing quickly, in the event of a frost being anticipated, and keep the soil distinctly moist. It does them good to be outside a week or ten days. When housed, abundance of flowers should be showing about a fortnight later, and by the end of November a thousand plants ought to have afforded 500 spathes, with many others to follow for Christmas.

Arums succeed well arranged on the ground in light houses, and should not be overcrowded. A temperature of 50° to 55° is high enough. If grown for cut blooms only allow them to root out into the soil below. Always keep them moist at the roots, but avoid applying too much water in the autumn and early winter months. Soot water and other weak, clear, liquid manure should be given frequently. When first housed, thrips are apt to stain the spathes before they unfold, also green and black fly may be troublesome. Nicotine fumes is the best remedy for both pests.

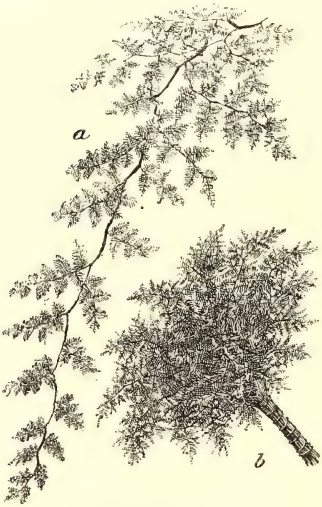

Fig. 168. Asparagus plumosus nanus—*a*, trail; *b*, bunch for market.

CAPE ASPARAGUS.

Owing to its great durability, in this respect far surpassing maiden-hair fern, the demand for "Asparagus Fern," as buyers persist in calling it, is ever on the increase. The most popular species is A. plumosus nanus, but A. tenuissimus and A. Sprengeri have their admirers—in fact all the Cape species are saleable—though the first-named pays better than any. Raising from seeds is the best form of propagation. Division of old stools is a slow method, and to be resorted to only when seeds are not available. Good new seeds of A. plumosus nanus and A. Sprengeri cost roughly about 1s. per dozen, and few of these, if sown in the spring, fail to germinate in brisk, moist heat. From thumb pots, in which the seedlings are first placed, shift into the 5-inch size, and grow the plants in a temperature of 55° to 65°, shading from the sun. They will make good progress on an ash-covered stage. Before the plants become much root-bound, it should be decided what method of culture is to be adopted. The plants succeed well in 10-inch pots, the growths being trained up the roof of a house with eucharises, ferns, or palms underneath. They thrive still better if planted out permanently. In either case, use a fair amount of drainage, and a coarse, rich compost. Peat may be employed or not, as the cultivator pleases. Some growers allow the plants to develop into great masses, merely roughly supporting the stems with stakes and raffia; others train them loosely up the roofs a few inches from the glass. During the summer a rest may well be given, keeping the plants quite cool, and in any case heavily shaded. When less air is given in September, and fire-heat turned on, strong shoots will push up, some of which will quickly attain a length of 6 feet to 8 feet. From these, long, handsome sprays may be cut two or three times during the winter, the smaller growths from the base of the plant being cut entire in the form of long trails. All through the growing season the plants require abundance of water, liquid manure being also beneficial. A temperature of 55° to 60° is quite sufficient during the winter. A. Sprengeri is better adapted for pot culture, and is particularly happy when suspended from the roof, plants in 8-inch pots producing numerous elegant growths suitable for shower bouquets. Long trails (*a*) of any of the species ought to fetch 2s. per bunch of one dozen, while the shorter sprays realise 7d. to 1s. per bunch (*b*) wholesale according to quality. (Fig. 168.)

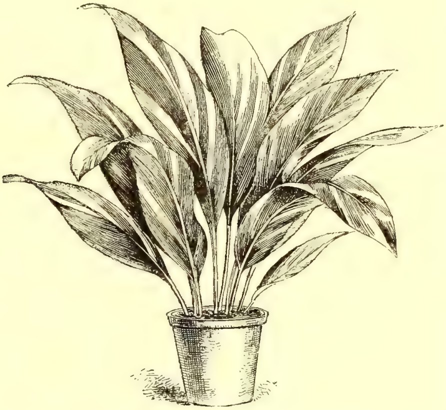

Fig. 169. Aspidistra lurida variegata.

ASPIDISTRA.

No plant stands the gas, dust, and rough treatment to which many house plants are subjected so well as Aspidistra lurida, commonly called the Parlour Palm. The variegated form (Fig. 169) is more beautiful, nearly as serviceable, but more delicate, and buyers have to pay about 6d. per leaf on the plants. Wholesale vendors may reckon on obtaining 18s. to 20s. per dozen for the green-leaved plants in 6-inch pots, and 30s. to 36s. for the variegated form. They increase slowly, propagation being effected by division in the spring. Pot in a mixture of loam, leaf soil, and sand; place the plants in gentle heat, and be careful not to overwater while the soil is only partially occupied by roots; when it is crowded with them copious supplies are needed in the summer. The plants succeed better than most others in shaded positions when the leaves are kept clean.

BOUVARDIA.

Bouvardias are not so popular as formerly. The varieties are elegant and beautiful, but in a cut state, the test by which most flowers are tried, they fail too quickly to please buyers. The double-flowering varieties last longer, but are not so pleasing in appearance. Some of the best single varieties are candidissima, Humboldti corymbiflora, jasminoides paniculata, and Purity, pure white; Bridal Wreath, alba odorata, jasminiflora, and Vreelandi, white, tinted pink; Dazzler, elegans, and President Cleveland, scarlet; Mrs. Robert Green, salmon pink; Priory Beauty, pink; and the doubles—A. Neuner, white; President Garfield, flesh pink; and Victor Lorraine, coral red. Small rooted plants can be bought at 10s. per 100, sometimes for less. Short, young flowerless shoots, also short lengths of the larger roots taken off old plants early in the spring, emit roots in light sandy soil, in brisk bottom heat. Newly-rooted plants should be topped early, and after they are well established in 2½-inch pots, once more topped, then soon afterwards shifted into 5-inch pots, in which they may be flowered. A peaty soil suits them best, and they ought to be given a good start in gentle heat and a moist atmosphere. During the summer, pits and frames with abundance of air suit them. They succeed admirably planted out in light soil and a sheltered sunny position, lifting carefully, and potting in September. The strong sucker growths give the most bloom. The two-year-old plants are of great value for flower-producing, and may be grown to a large size. After the young plants have ceased flowering, gradually withhold water, giving only enough to prevent shrivelling. In March or April cut them back freely, and start in gentle heat. When breaking afresh, shake the roots nearly clear of soil and re-pot. They may eventually be flowered in 7-inch pots. In the markets bouvardia flowers fetch 4s. to 6s. per dozen bunches, and well-flowered plants in 5-inch pots, 5s. to 7s. per dozen. (See Index for coloured plate.)

BULBOUS-ROOTED PLANTS.

In this section are comprised many popular flowers that are produced for the markets in incalculable numbers. The greater portion are forced, while many acres, in addition to what is done on the Scilly Isles, are devoted to the production of unforced flowers. All the hyacinths, and nearly all the tulips forced, are from imported bulbs, as also are the greater proportion of narcissi and daffodils.

ROMAN HYACINTHS.

These are the most popular with growers, and fairly remunerative. The best bulbs come from the south of France, certain districts being famed for them. They cost 35s. to 55s. per 1,000, or at all events that is as much as ought to be paid for them. The first strong spikes usually realise 10d. per dozen early in the season, and 6d. to 8d. later. Smaller successional spikes (two or more) from the same bulbs may be said to represent the profit, these selling at 6d. per dozen, occasionally less. If the bulbs are received in August, or early in September, commence potting and boxing at once. Herring boxes at 9d. per dozen answer well for these and various other bulbs. "Romans" (page 225) may be packed almost close together in either pots or boxes, using rich loamy soil. Arrange in large beds in the open, give a watering and cover with four inches of ashes or common sand. These early bulbs are rather slow in rooting. When the roots are finding their way out of the boxes or pots, and top growth has commenced, clear them of ashes, and commence forcing a portion of the plants at once. Three weeks or a month after potting the first, a second batch should be done, and similarly treated. All ought to be placed in soil before they have formed many roots in the bags or boxes they are stored in. These hyacinths are easily grown, and flower without the expenditure of much fire-heat. To succeed the Romans, miniature Dutch hyacinths, the bulbs being a year younger than those sold for conservatory decoration, are grown. Each gives a good spike, and will stand gentle forcing. The pure whites are in the greater demand, and much the dearer to buy, the bulbs costing from 45s. to 70s. per 1,000. The spikes frequently fetch 2s. per dozen. These and the coloured varieties may be flowered in boxes, or three bulbs can be placed in a 5-inch pot, and if the spikes are not drawn up too much, these pots of plants will sell at from 4s. to 6s. per dozen. To flower at Easter, when the best prices for white hyacinths are given, the plants must be retarded in cold frames.

TULIPS.

At one time Tulips were nearly or quite as popular as hyacinths with market growers, but they have had to give way to narcissi and daffodils. They are still extensively grown, however. The Duc Van Thol varieties are valuable on account of their earliness, as they can be had in flower at Christmas; but directly the longer-stemmed later varieties are available, the Van Thols are disregarded. The trade prices for Van Thols range from 12s. to 45s. per 1,000 bulbs, the pure white varieties costing the most. The flowers may realise anything from 1s. 6d. down to 6d. per dozen. Larger flowering tulips that may be had in bloom early in the new year are La Reine, white; Pottebakker White; Proserpine, rich pink; Yellow Prince, golden-yellow; Thomas Moore, orange; Pottebakker Scarlet; Duchesse de Parme, brownish red, and Belle Alliance, scarlet; all of them are comparatively cheap to buy. For flowering late, at Easter in particular, the doubles are mostly preferred, and of these the best, from a market-grower's point of view, are Murillo, pink; imperator rubrorum, scarlet; and Reine Blanche, white; the last-named superseding the less reliable La Candeur, and is quite as cheap. Tulips ought always to be marketed before they are fully expanded, the singles fetching from 1s. down to 6d. per dozen, at times even less, and the doubles from 3d. to 6d. per dozen more. Start them much as advised in the case of hyacinths. The bulbs may be placed closely together in the pots or boxes (Fig. 170). In order to have the flowers with long stems, the forcing should take place in deep frames over hot-water pipes; shading with paper improves the appearance of the foliage. The later batches will flower in the spaces between tomatoes in houses, and in various other positions of a similar nature. When wanted for packing, cut them down close to the bulbs, long stems always being appreciated. There is only a limited demand for tulips in pots, and these may be "made up," without detriment, from those started in boxes.

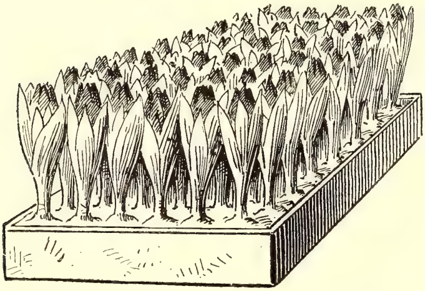
Fig. 170. Market box of Duc Van Thol Tulips.

NARCISSUS.

For flowering very early, the improved form of the old Paper White, known as grandiflora, is the best. The trade price for this is 25s. to 30s. per 1,000 bulbs, and the average price obtained for the flowers does not exceed 6d. per dozen spikes. Flowers of this variety are largely imported, which accounts for the lowness of prices. The double Roman is also grown, but the more expensive varieties, belonging to the Polyanthus section of narcissus, are principally cultivated for local trade, the bulbs costing too much to be forced extensively. The Poeticus group of Narcissus is extremely popular, though not particularly profitable to grow. The best for gentle forcing, so as to have them in flower in March, is the early ornatus, Burbidgei, also flowering early. Home-grown bulbs flower freely under glass, or imported bulbs may be bought at the rate of 23s. to 28s. per 1,000. The flowers fetch about 6d. per dozen. Daffodils, or "Daffs," as termed in the markets, is the popular name for various trumpet-flowered Narcissi, these including also some double forms. For forcing early with a view to having flowers fit to cut late in December and the early part of January, when the prices are high, or, say, 1s. 6d. to 2s. per dozen, Golden Spur is recommended, only unfortunately the bulbs are dear, costing £5 per 1,000; Trumpet major can be bought for 30s. to 35s. per 1,000, and forces equally well. Bicolor Horsefieldi, £5 per 1,000, also forces readily, and the blooms fetch top prices. Princeps and Stella are two cheap varieties which can be had in flower moderately early, while the expensive incomparabilis Sir Watkin is another favourite for flowering under glass. Of the doubles, telamonius plenus is much forced. Orange, white, and sulphur Phœnix also force satisfactorily. The doubles sell well in February and March, and the more successful growers manage to have them ready to cut still earlier.

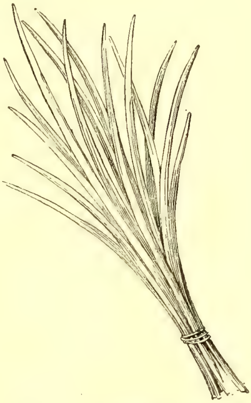

Fig. 171. Sale Bunch of Daffodil Leaves.

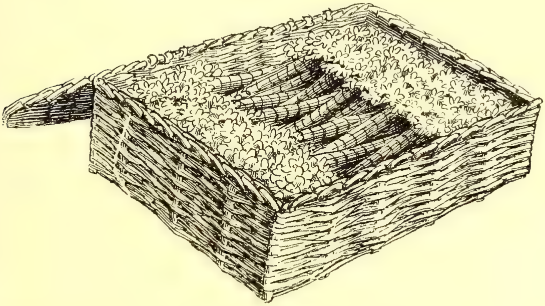

Fig. 172. Market Hamper of Narcissi.

Prices for these blooms range from 2s. down to 1s. per dozen. The "grass" (leaves) also, bunched (Fig. 171) and sent separately, sometimes realises nearly as much as the bulbs cost. Narcissus and daffodil bulbs should be packed nearly as close together in pots or boxes as they can be placed, early in the autumn, and when arranged in beds must be heavily covered with ashes, otherwise they will be lifted out by the roots. When forward enough, move them into a cold house, frames, or pits, and a week or so later, commence forcing, introducing successional batches into heat, every week or ten days. A light position, with a temperature of 50° to 60°, is found to answer well. The flowers are tied in bunches and packed in boxes or stout flat hampers, as shown in Fig. 172.

FREESIAS.

There is only a limited demand for these charming flowers, prices ranging from 4s. to 6s. per dozen bunches. The bulbs can be raised from seed, or bought very cheaply, and the plants should be flowered in 5-inch or slightly larger pots, from five to seven bulbs in each. Start in August in cold frames, and during the winter the best positions for them are light shelves in a warm greenhouse. Withhold water after flowering, and give the bulbs a good rest in cool quarters. F. refracta alba is the favourite variety. For cultural details see page 232.

GLADIOLI.

The pure white form of G. Colvillei, known as the Bride, is largely grown in pots, but the profits accruing are doubtful. A disease frequently clears the plants off before they come into flower. The flowers that open properly have to be marketed quickly, and very often do not realise more than 6d. per dozen spikes. The corms, however, cost comparatively little. They must not be kept out of the soil long after they are received. Place them somewhat thickly in 6-inch pots, arrange the pots in cold frames, and cover with ashes till top and bottom growth has well started. Flower in gentle heat.

Spanish Irises.—Owing to the cheapness of the bulbs many growers are tempted to give these a trial, but they will not force satisfactorily, and only the best white and yellow forms sell at all readily at 3d. to 6d. per dozen. Treat similarly to gladioli.

CAMELLIAS.

Most of the plants flowered in this country are imported from the Continent, as they can be bought more cheaply than they can be grown on this side of the Channel. There is only a limited demand for plants, and cut blooms are seldom asked for. Pure whites, of which the best is the old alba plena, are used with good effect in memorial wreaths and other forms of decoration, and where there is a steady local demand for floral designs, white camellias will be found profitable. The blooms, if sent to the market, must be packed with great care, as they are very liable to be bruised, also to shatter quickly. Consequently, the returns are always uncertain. They may be anything from 1s. to 3s. per dozen. Buyers like to have stems with the blooms, but those who market all they grow should leave at least two buds behind on each growth after cutting, removing and sending away the earliest blooms without wood attached, cutting the later blooms. Large, healthy old plants, either in tubs or planted out in borders of loamy soil, under glass, produce numbers of blooms, and in some instances no thinning out of buds takes place, five or six blooms being picked from each strong shoot. In this way a long and valuable succession is obtained. These blooms without stalks require to be carefully mounted on wire stems, with or without the addition of leaves, to fit them for wreath-making. Strong, well-established bushes should be syringed frequently in hot weather, and assisted with weak liquid manure. An occasional surfacing of what is known as native guano is found to answer well.

CARNATIONS.

There are no signs of waning popularity as far as carnations are concerned, and those who can grow them well will find them profitable. Haphazard treatment will not do; nor is there any pay attached to them if the plants are crowded among a variety of other kinds. From first to last they ought to be kept by themselves. Under glass their season should extend all through the winter, and till the border varieties are available. This refers more especially to the tree or perpetual-flowering carnations, the Malmaison section not producing many flowers till the spring.

Varieties of winter-flowering carnations that have proved among the best for market culture are—Miss Mary Godfrey (Fig. 173), Lizzie McGowan, Purity, and La Neige, pure white; Duke of York, crimson; W. Robinson, bright scarlet; A. Alegatiere, scarlet; Daybreak, pale flesh pink; Reginald Godfrey, and Mdlle. Thérèse Franco, salmon pink;

Miss Jolliffe Improved, pink; and Mrs. Llewellyn, soft, rosy pink. The pinks and whites are most in demand, these fetching 1s. 3d. to 1s. 6d. per dozen blooms all through the season, or, say, till late in May, while the other colours are usually sold at 3d. to 6d. less per dozen blooms. Naturally, quality of blooms largely affects the returns, and extra fine samples of R. Godfrey and Duke of York sometimes bring 2s. or more per dozen. Germania is not so continuous as most of the preceding, but it flowers grandly in the spring, and, all things considered, is yet the most popular, moderately priced, yellow-flowered variety in cultivation. Other varieties belonging to the border section also flower freely under glass in the spring, but often when the markets are rather too well supplied with carnations. All the Malmaisons pay for good cultivation, but compared with the perpetual flowerers their season is short, and they require more skilful treatment. From 4s. to 6s. per dozen, good blooms, is a fair price for Malmaisons, but there are times when they are cheap.

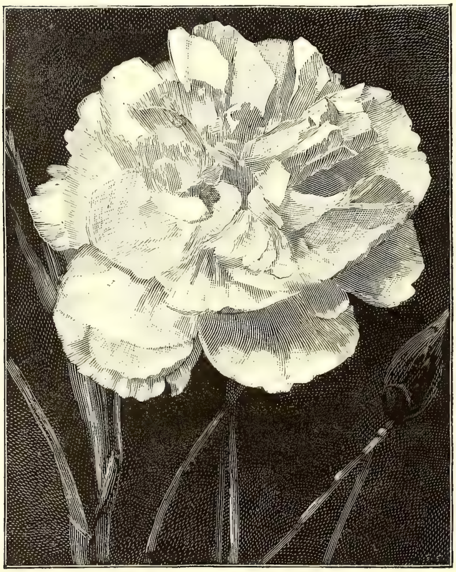
Fig. 173. Carnation—Miss Mary Godfrey.

Side shoots slipped, when about 4 inches long, from plants growing in light positions rarely fail to root freely in gentle heat. If these are rooted three in a $2\frac{1}{2}$-inch pot they may be moved into 5-inch pots without dividing them, and subsequently placed in 7-inch or 8-inch pots. This plan answers well in the case of any rooted late in the spring, and if the plants are not topped, each forms one strong leader which commences flowering soon after housing in September. Early-rooted plants may be topped once, exceptions being made in the case of Duke of York and W. Robinson, which will not flower till March, if topped. These single plants may be flowered in 7-inch pots, but the 6-inch size is large enough if the plants are to be sold; light, loamy soil, with plenty of grit in it, suits carnations. While under glass avoid much heat, and keep down green fly rigorously by means of nicotine fumes. Place a stake to each strong growth when the plants are arranged on beds of ashes in June. Avoid reckless watering and carefully exclude worms from the pots. House before the wet, cold days of September injure the plants. Under glass they may be arranged on the borders previously occupied by tomatoes, and if they root into the soil good rather than harm will result. Fire heat should only be applied to prevent very low temperatures and to dispel damp. Remove some of the side buds with a view to improving the size of those reserved.

Malmaisons are the most easily propagated by layering, in July or August. Well-rooted layers, detached and well-established in 5-inch pots by the end of August or early in September, will each give several fine blooms in the spring, and the second season, if well grown in 8-inch pots, will flower grandly. Cool treatment suits this class of carnations. They must be kept free from green fly and be most carefully watered, especially where little or no fire-heat is afforded. In dry-heat they are very liable to be crippled by aphides. The carnation disease is also often found troublesome. Syringing with lime-water is a remedy for the disease.

CHRISTMAS ROSES.

There is not so much profit attached to these flowers as formerly. They are too stiff to please many people, added to which, they are scentless. The best species to grow is Helleborus niger, and of this the most valuable form is H. n. maximus, also known as H. altifolius. This flowers very early in the open, but unless protected by frames the flowers are dirty-white in colour, with short stalks, and do not keep fresh long. It is a good plan to arrange the plants in beds over which span-roofed or other frames can be placed during the flowering period. Strong clumps may be nearly or quite cleared of leaves, lifted, packed in boxes, large pots, or beds of loamy soil and gently forced with a view to having abundance of blooms at Christmas, when they are worth from 6d. to 9d. per dozen; but, as a rule, they are plentiful early enough without forcing. These Hellebores succeed in a deep, rich, freely-worked soil, but fail in hot, dry positions. The division of clumps for increase should take place after the new leaves are fully developed and well matured, or after midsummer.

CHRYSANTHEMUMS.

Of late years chrysanthemums have not been so profitable as they were at one time. This is owing to the exceptionally rapid increase in their production. Mild autumns have also militated against the sale of house-grown chrysanthemums, and, as a consequence, the prices realised at times have been very low indeed. Pure white varieties pay the best, especially those which are good and marketed either very early or very late in the season. During September and the early part of October, good (disbudded) blooms of Madame Desgranges, Mytchett White, Queen of the Earlies, Barbara Forbes, and Lady Fitzwigram, frequently fetch 2s. per dozen, and at 1s. they pay well; while smaller flowers bunched (not as shown in Fig. 174, page 305, but after the manner shown in Fig. 175, page 306) realise from 9s. to 12s. per dozen bunches. Directly they become more plentiful the prices fall at least 50 per cent. During the "glut" which usually takes place late in October and the early part of November, chrysanthemums bring very poor returns indeed. Towards the end of November and all through December prices slowly improve, and for the Christmas demand they stiffen considerably. Well-grown blooms, with long stems, of Lady Lawrence, Princess Victoria, L. Canning, Princess Blanche, Niveus, Mdlle. Thérèse Panckoucke, J. Agate, and any other good white variety, may fetch as much as 2s. per dozen then, but 1s. 6d. is nearer the average. Medium-sized blooms realise about 1s. per dozen, and small flowers 6d. to 9d. per dozen bunches. The prices for coloured varieties are 25 per cent. lower all through; good yellows and bronzes, however, at Christmas and a few following weeks, sell nearly as well as whites.

There is a fairly good demand for plants in pots. The bulk are grown in 8-inch pots, but many are also flowered in the 7-inch size. If the plants are dwarf, bushy, well furnished with leaves, and the flowers are good, remunerative prices are obtained, or from 6s. to 14s. per dozen plants.

Every season many novelties are introduced, and a trial ought to be given to a few of the more promising with a view to increasing those which prove more satisfactory than the older varieties. Those that require much staking, or which produce blooms on weak peduncles, are of small use to market growers. They prefer plants of branching and fairly erect habit of growth, carrying blooms that stand up boldly after the style of Lady Lawrence and W. H. Lincoln. Especially ought those with soft stems and leaves to be discarded in favour of others of a more woody disease-resisting nature. A large assortment of varieties is undesirable, and the bulk of those grown may advisedly be very early and very late in flowering.

Some of the best earlies, most of which are in general cultivation, are, Mytchett White, Lady Fitzwigram, Madame Desgranges, Queen of the Earlies, Barbara Forbes, Lady Selborne, Elaine and Sœur Melanie, all white. Mrs. Hawkins, Ryecroft Glory, Emily Grunerwald, Yellow Queen of the Earlies, and Yellow Lady Selborne, yellows. Comtesse Foucher de Cariel, orange yellow; Roi des Prococes, crimson; W. Holmes and Vivid, red; Madame Marie Masse, lilac mauve; and Harvest Home, bronze.

Good mid-season varieties, for succeeding the earlies, and forming a natural succession to those already named, in the supply of marketable blooms till the middle of December, if need be, are, Souvenir de Petite Amie, Mdlle. Lacroix, Bouquet des Dames, Niveus, Mrs. H. Weeks, white; Clinton Chalfont, Yellow Source d'Or, Phœbus, R. Hooper Pearson, and Major Bonaffon, yellow; Vice-President Hardy, Tuxedo, Pride of the Market, and Source d'Or, bronze; O. J. Quintus, mauve pink; and Tokio, red.

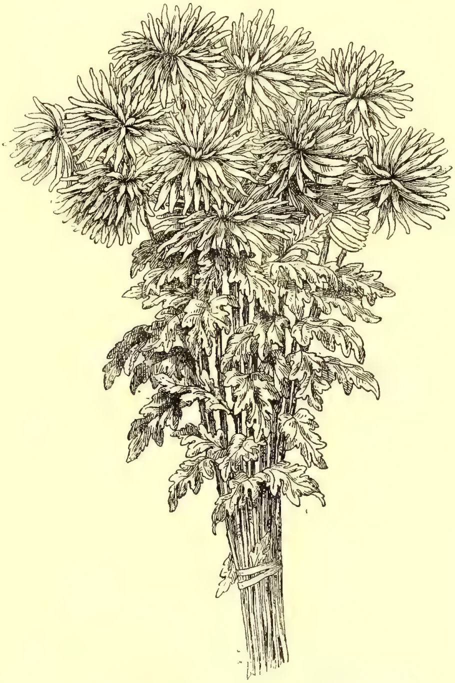

Fig. 174. Chrysanthemums—Faulty Market Bunch.

For flowering late in December, lasting in some cases till well into January, the following are recommended:—Princess Blanche, Princess Victoria, Lady Lawrence, Pelican, J. Agate, L. Canning, and Mdlle. Th. Panckoucke, white; W. H. Lincoln, golden; Dart, yellow; Lord Brooke, and Golden Gem, bronze; Etoile de Lyon, pink; E. D. Smith and Royal Standard, crimson.

For selling as pot plants, Madame Desgranges, Mytchett White, Lady Fitzwigram, Ryecroft Glory, Comtesse F. de Cariel, Roi des Prococes, W. Holmes, Madame Marie Masse, Souvenir de Petite Amie, Phœbus, R. Hooper Pearson, Princess Blanche, W. H. Lincoln, Etoile de Lyon, Tuxedo, Golden Dart, and varieties of a similar habit of growth are suitable.

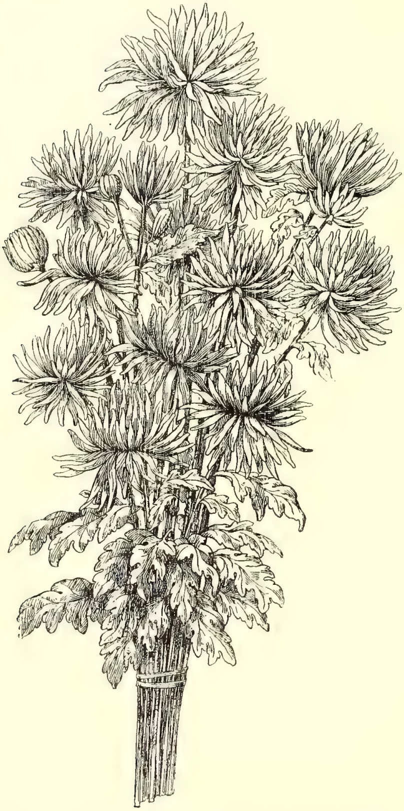
Fig. 175. Chrysanthemums—Proper Market Bunch.

There is only a limited demand for extra large or show blooms, and those who would grow them are referred to what has been advised about these earlier in this work, Vol. I., p. 331, *et seq.* For all ordinary purposes, January is early enough to commence propagating. The start should be made with the earliest varieties, especially if well-developed blooms are desired early in October. All the cuttings may be placed thinly in boxes of light sandy soil, and rooted in gentle heat. Top early, and when side-shoots are beginning to form, place either one strong plant in a 3-inch pot, or three into 4-inch pots. The latter plan answers well with varieties that do not branch freely from the base. The plants ought to be gradually hardened in cold frames, and, before becoming seriously root-bound, shifted into their flowering pots. A rich loamy compost, adding a 6-inch potful of quarter-inch bones to every barrow-load of soil suits chrysanthemums. Potting should be done firmly, and the plants arranged on ashes. The watering from first to last must be carefully attended to. Plants with their pots well filled with roots often require water twice a day in hot weather, with occasional supplies of liquid manure. It is also advisable to syringe them twice or thrice on bright, sultry days, as this freshens the foliage, and wards off attacks of the dreaded "rust" fungus.

Varieties that are to flower early ought not to be topped more than once after the final potting. The topping of mid-season varieties should cease late in June, but those intended to flower in December may have their last topping a month later, except Lady Lawrence and Princess Victoria, which should form buds early on strong growths. The plants ought to be secured early to bamboo or other supports, elaborate staking being expensive and unnecessary.

Disbudding should be attended to in good time, leaving the central buds on each shoot. In the case of the latest varieties much of this may be done after the plants are housed. Allowing all the buds to remain on the plants usually means a display of small flowers which are only fit for bunching, low prices resulting. The early varieties ought to be housed directly the buds begin to show colour, the mid-season sorts towards the end of September. Provision should be made for sheltering the late varieties, if the attempt is made to retard them in the open; but the safer plan is to arrange them in a large, airy house, and keep this open day and night, closing and employing fire-heat only when frost is anticipated. A dry atmosphere suits chrysanthemums under glass, mildew quickly gaining an ascendancy in moisture-laden surroundings. Strong liquid manure does more harm than good. Clear, well-strained soot-water, weak farm-yard liquid manure, and light surfacings of special manure are beneficial, but if either nitrate of soda or sulphate of ammonia be used, do not exceed a quarter-ounce to the gallon of water.

Neat, bushy plants, in small pots, can best be had by rooting the tops of firm young shoots of sturdy-growing varieties in April or May, topping them once, or at the most twice, and shifting into the flowering pots before the plants become root-bound. From first to last they must be properly watered and supported, and must not be permitted to push roots through the drainage into the ashes on which the pots stand in the open, as this may cause the subsequent loss of many leaves. When housed, arrange them in light positions. Not more than one stake ought to be needed; indeed, the best plants sent to the markets do not require stalking at all.

In preparing chrysanthemums in the open ground for lifting and re-planting under glass, plant sturdy-growing varieties only, early in May, in soil that has been manured for some previous crop, dug during the winter, and forked up in the spring, making it fine to a good depth, arranging them 2 feet asunder, giving water, if necessary, and mulching, after rain, with strawy manure. Only during exceptionally hot and dry weather will they need an occasional soaking of water. Top the early varieties once and the later sorts twice. If the early varieties are massed, temporary protection may be afforded them where they are, the Desgranges family in particular paying well under this treatment. A week before lifting cut round each plant with a spade 6 inches from the stem, to cause the formation of root fibres, and if the soil be dry give a good watering the evening before their removal. If they are to follow tomatoes or cucumbers under glass, it may be necessary to well moisten the soil in the beds. The chrysanthemums should be lifted with as much earth about the roots as will hold together safely, and be replanted firmly and closely together in rich soil. They will require abundance of water, and, if all goes on well, very few of the flowers will have large, open centres, or "eyes," to them. Replanting in beds is preferable to placing the plants in pots, in which the roots have, perforce, to be crowded.

CINERARIAS.

Only as pot plants are Cinerarias saleable, and there is not sufficient demand for them to justify market growers in providing other than for the wants of their own immediate neighbourhood, or regular customers. They may be had in flower by midwinter by sowing seed in May, and not giving the plants a check to their growth at any time; but they are more appreciated early in the spring, from seed sown in June, or raised from offsets. From first to last they must be afforded cool treatment. During the summer, cold frames facing the north are the best positions for the plants, and through the winter, stages in houses from which damp and frost are expelled by fire-heat. There must be no forcing, or the plants will be quickly infested with green fly. Avoid crowding, and promote healthy growth with liquid manure. Plants in 5-inch pots, when in flower, fetch 5s. to 6s. per dozen wholesale, those in 6-inch pots being worth rather more.

CYCLAMENS.

These have largely taken the places of cinerarias and primulas for flowering in rooms, greenhouses, and conservatories (Fig. 176), and well-grown plants find a ready sale from October till April inclusive. In 5-inch pots they fetch from 7s. to 10s. per dozen, and in the 6-inch size 12s. to 15s. per dozen. In a cut state a certain sale is found for the best whites at 4d. to 6d. per dozen blooms, the coloured varieties not bringing quite so much. The Persicum giganteum strain is the most profitable, and if not so floriferous as the ordinary Persicum strains, the plants possess a stronger constitution, and the blooms are much larger. Seed should be sown not later than October, thinly, in pans of sandy loam, and placed in heat to germinate. The young plants ought to be kept moving, not far from the glass, in genial warmth, and gradually shifted into the flowering pots, disturbing the roots as little as possible each time. While in frames or pits during the summer, shade from the sun, and spray the plants with tepid water twice daily. Allow adequate room, raise the plants near to the glass, ventilate carefully, and do everything to prevent the leaves from becoming long in the stalk. Flower the plants in a light position in gentle heat. Never cut, but pull the flowers clean out of their sockets, decaying stumps being responsible for the ruin of many plants. After flowering, gradually withhold water to the extent of causing the loss of all the leaves. After this baking in heat, the corms will start very strongly when given water and syringed. Repot and treat similarly to the one-year-old plants. Properly treated, they will produce twice the number of flowers obtained from young plants. See also pp. 10-16, Vol. II.

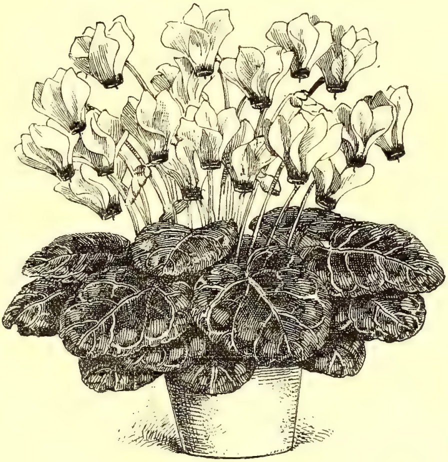

Fig. 176. Cyclamen persicum (market plant).

CYTISUS.

These plants, also known as Genistas, are great favourites with buyers, as the bright yellow, pea-shaped flowers are very showy and sweet. A few growers round London almost monopolise the trade, provincial florists purchasing them at 9s. to 12s. per dozen. G. Atleeanus and G. racemosus are the best for the markets. Young, flowerless shoots may be taken off with a heel, before marketing the old plants, or in August, and made into cuttings as shown in Fig. 177. Spring cuttings should be inserted in pots of sandy soil, surfaced with sand, placed in brisk heat, and covered closely with bell glasses or frames. August inserted cuttings root in close-shaded cool frames. After the spring cuttings are rooted, harden, also top all the plants once before placing them singly in small pots. Keep the plants in cool quarters during the winter; about a fortnight prior to shifting them into their flowering pots, top the shoots somewhat severely, this causing them to branch strongly. During the summer, shallow frames and pits are the best positions for them, drawing the lights off in August, or after the growths are well matured. During the winter they should be stored thinly on stages in cool, light houses. Dwarf floriferous cytisuses are very beautiful in the spring, and should be more generally grown in private gardens. Some of the plants may be forwarded in gentle heat.

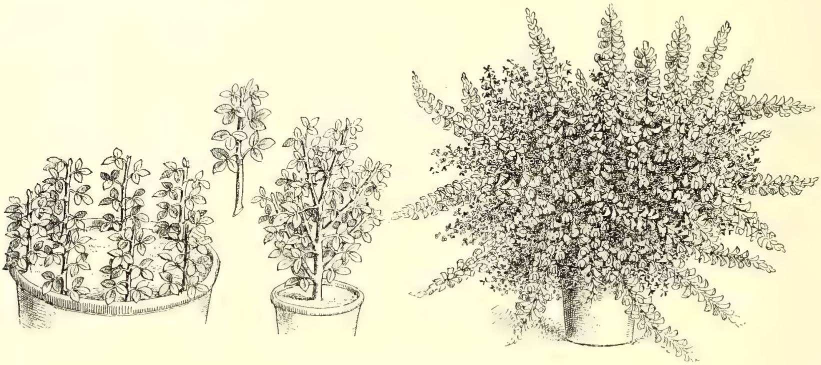

Fig. 177. Cytisus Atleeanus.
(Cuttings inserted; plant potted, topped and branching; flowering plant.)

EUCHARIS AND PANCRATIUM.

There is a good sale for flowers of these two kinds of tropical plants. Eucharises are most in demand for memorial emblems, and pancratiums are employed for similar purposes; also for bouquets. They are associated because the plants of both succeed well under nearly identical treatment. A stock of Eucharis amazonica (Fig. 178) can be worked up in a few years, starting with dry bulbs, if established plants cannot be "picked up" cheaply. Pancratium fragrans is rather slow to increase, and, as a rule, it takes five or six years to get together a good stock of plants.

The start may either be made by placing three good bulbs of eucharis, or one strong bulb of pancratium in a 5-inch pot, and as these crowd the pots with roots, shifting into larger sizes. Root-bound plants produce flowers the most freely, but every second

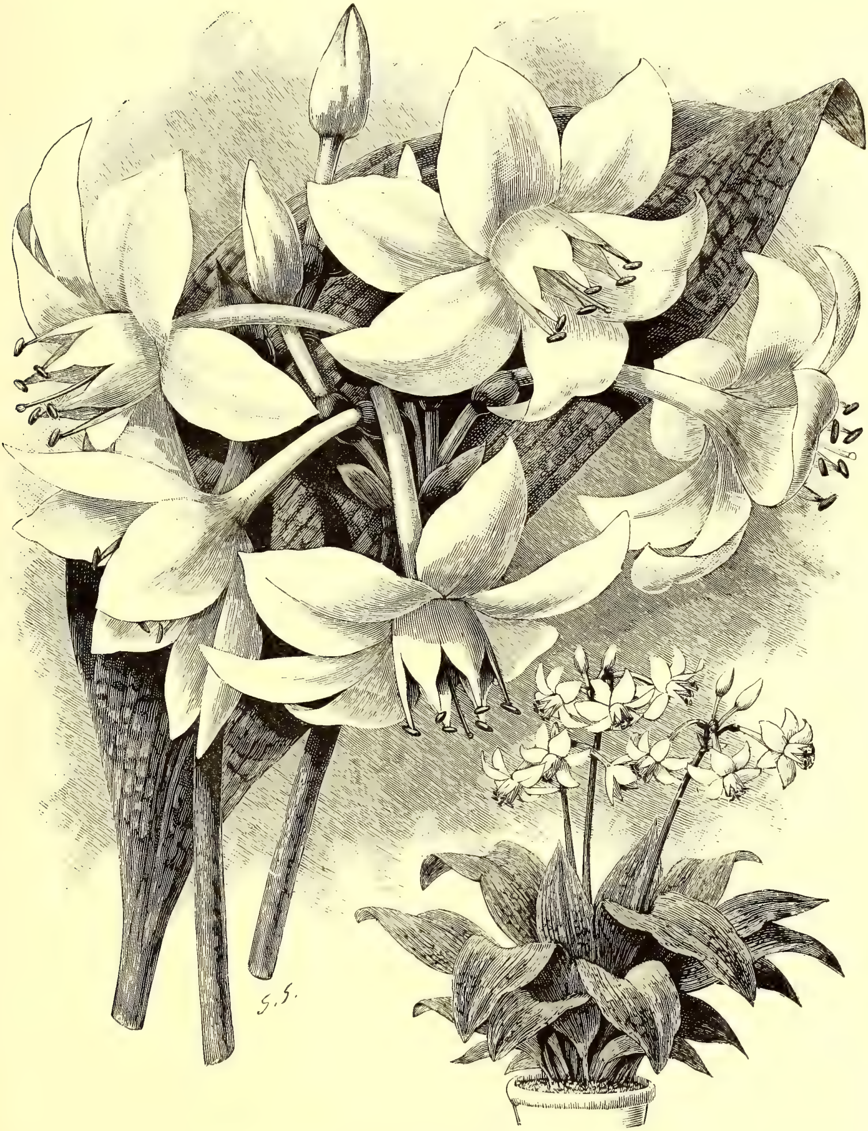

Fig. 178. Eucharis amazonica.

or third year strong plants ought to be turned out of their pots, divided and graded. The larger flowering bulbs may be arranged thinly in 9-inch or slightly larger pots, and the smaller bulbs in 6 or 7-inch pots, eventually shifting into larger sizes. Eucharises take more readily to their fresh quarters when the leaves are cut off; this also affords a good opportunity for getting rid of mealy bug, if any of these repulsive insects are on them.

Re-potting should be done either in the spring or autumn, not while hot weather prevails. The pots must be well drained and a compost of fibrous loam, peat, leaf soil, sand and charcoal employed. They are heat, shade and moisture-loving plants, and succeed well under a thin roof covering of Stephanotis floribunda. Eucharises also flourish when planted out in such a position, always provided the stephanotis is clean. If nothing is grown on the roof, there would be all the more necessity for affording shade during hot weather. Bottom, heat pipes are of the greatest assistance, confining these in a chamber under the bed. Neither eucharises nor pancratiums should ever be dried off at the roots to the extent of causing them to lose many leaves. After they have formed a set of new leaves, and these are fully matured, a slight rest, by lowering the temperature 5° to 10° and giving less water, is desirable. After this rest of about six weeks, suddenly raising the temperature 10° by night and day, giving water at the same time, will excite the plants into flowering. This may be done two or three times in a year, the eucharises flowering the more frequently.

During the summer and early autumn months, both eucharis and pancratium blooms are plentiful in the markets, the prices then falling to 1s. 6d. per dozen occasionally; but earlier and later in the year 3s. to 5s. per dozen is nearer the prices obtainable. Frequent root disturbance is not advised, still shaking out and re-potting a portion of the stock of eucharises in February or March causes many of them to flower soon afterwards, and these crops of flowers usually pay well. Both these and pancratiums are sent to the markets with short stalks only, the scapes or main stems being left till the last two or three blooms are expanded. See pp. 331-335, Vol. II.

FERNS.

Fern-growing for the markets on an extensive scale ought to be regarded as a distinct branch of a great industry. A range of low, flat-roofed, well-heated houses should be devoted solely to the production of these elegant plants, the aim being to turn out large numbers of the popular kinds as quickly as possible, or, say, within a year of sowing the spores. There is such keen competition that only strong, bushy plants find favour with buyers. The best selling ferns are Asplenium biforme, Adiantum cuneatum, Cyrtomium falcatum, Lomaria gibba, Nephrolepis exaltata, Phlebodium aureum, Pteris cretica major, P. serrulata, P. s. cristata and compacta, P. tremula, and P. Wimsetti. The prices at which these have to be sold varies from 5s. to 7s. per dozen in 5-inch pots, the larger "Trems" (the market term for Pteris tremula), phlebodiums and nephrolepis, in 6-inch or larger pots, selling at 9s. to 12s. per dozen. A market box of Pteris cretica is shown in Fig. 179.

In what may be termed mixed nurseries, no attempt is made to raise all the ferns required, the majority of proprietors buy small plants in stores, *i.e.*, the boxes in which the tiny sporeling plants are first pricked out an inch or two apart; or else give 8s. to 10s. per 100 for small plants in thumb pots and "grow them on." Quite a large trade is done with these small ferns, florists buying them wholesale at the prices just named and retailing them at 3d. each. Those who can produce them easily find the profits fairly satisfactory. The spores, either home-saved or purchased, are sown on the surface of fine loam or peat, kept constantly moist by having water poured round the insides of the pans, these being further covered with slates or squares of glass, kept darkened, and gentle heat maintained. If the plants come up thickly, as they usually do, they are moved in small patches into shallow boxes, and, as a consequence, bushy plants result more quickly than is the case when single plants are grown. Arranged on an ash-covered slate staging, and well looked after, progress is fairly rapid, especially after the shift from thumb pots into the 5-inch size is given.

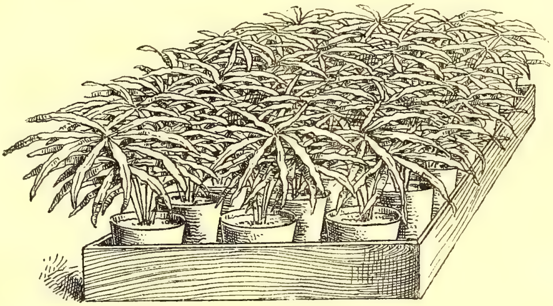

Fig. 179. Pteris cretica for Market.

For the first six months the plants may be arranged somewhat closely, but when in 5-inch pots they must not be unduly crowded, or they will soon become "weedy." From first to last they must be kept uniformly moist at the roots, and a genial heat maintained, ranging, say, from 50° to 55° by night, and from 5° to 10° higher in the daytime. A pinch of native guano, or other mild fertilizer, may be given with advantage, when the pots are well filled with roots, as the stimulant keeps the plants in good colour for the markets. If larger plants are desired, the final shift ought to be given before the plants become root-bound. Divisions never grow so evenly and strongly as do sporelings, and dividing old plants is a method of propagation seldom followed by market growers.

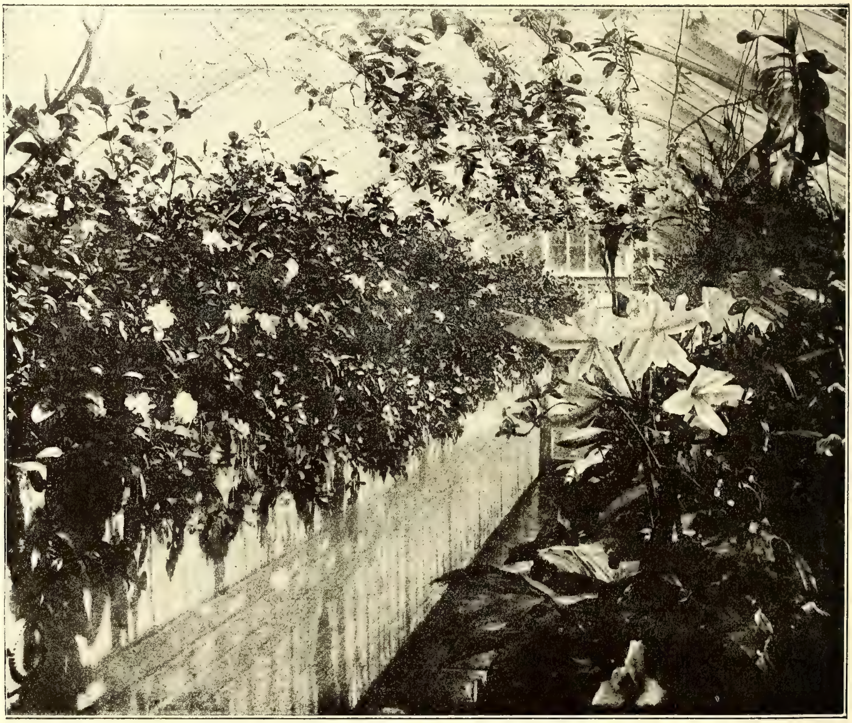

Fig. 180. Gardenias and Stephanotis. (*Journal of Horticulture.*)

Asplenium biforme produces numerous fernlets on the older fronds (page 150), and if the fronds are taken off, and pegged down to peaty soil in pans, a number of rooted plants are soon ready for separation. Progress with this plant is not so rapid as in the case of pterises and adiantums, two plants of which are frequently placed together in 5-inch pots—this meaning a considerable gain in time in having them ready for sale. Clear them out directly the plants are large enough for the purpose for which they are intended, and occupy the space thus liberated with fresh stock. Fern raising and growing goes on all the year round, to meet the enormous demand for these always popular plants.

GARDENIAS.

These ought to be grown thoroughly well, or let alone altogether. A few odd plants are seldom seen in a profitable condition. Gardenias should be grown strongly in a brisk, stove temperature, receiving, when well established, abundance of water at the roots and frequent sprayings. If pot culture only is resorted to, it does not pay to keep old plants. Gardenias succeed admirably planted in beds of gritty, peaty soil, over a hot-air chamber, always provided they are shaded from strong sun, properly watered, and kept free from mealy bug. They are thus grown as shown in the illustration (Fig. 180) in the gardens of the Queen, with stephanotis overhead. The large flower on the right is a crinum, sent from Ashanti by the late Prince Henry of Battenberg. Gardenia radicans major is the more floriferous variety, but G. florida major, or intermedia (page 340, Vol. II.), produces the finer flowers. They should be cut with a few clean leaves attached, and packed carefully in small deal boxes holding about 1½ dozen blooms. During the summer months they often sell at the rate of 1s. per dozen, but, when less plentiful, double that price is obtained.

GREVILLEA.

Neat plants of G. robusta, about one foot high, in 4-inch or 5-inch pots, frequently sell at 6s. to 8s. per dozen, and find the readiest sale in Provincial towns. New seed sown in February is not slow or uncertain in germination, and the seedlings may easily be grown to a saleable size by the autumn—first in light greenhouse then in frames during the summer. This plant can be recommended for house decoration where gas is burnt. It is elegant in habit, with fern-like leaves, and is suitable for vases in rooms.

HYDRANGEAS.

Londoners seem to have a partiality for sturdy single-stemmed plants, each furnished with one large head of bloom. H. hortensis is best adapted to this form of culture. For more bushy plants, having three to six heads of blooms, H. Otaksa and the small white Thomas Hogg are the more suitable to grow. Strong cuttings of flowerless shoots, taken off in the spring, placed singly in small pots and plunged in a propagating frame, usually root freely, and, during the summer, should be shifted into 5-inch or 6-inch pots, growing the plants in frames exposed to the full sun. After a good rest, these may be forced, and had in flower early. They will be somewhat tall. A method of securing dwarfer plants is to wait till the flowerless shoots on old plants have fully matured, and are forming a bold bud at the apex early in August. They are then taken off, and the short cuttings made from them inserted singly in small pots, kept in close frames. The young plants so raised are subsequently partially dried at the roots, the leaves falling off and leaving a strong crown bud, in which an embryo bloom was actually formed before the cutting was made. Early in the New Year these small plants may be started in brisk heat and a moist atmosphere, and ought to receive an early shift into 5-inch or 6-inch pots. The majority will soon develop flower heads, and should be ready for marketing at Easter or thereabouts.

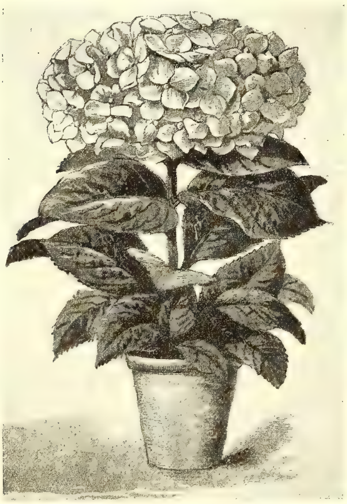

Fig. 181. Hydrangea hortensis (market plant).

Hydrangeas in small pots must be very liberally treated at the roots, especially after the flower heads are commencing to develop. Iron filings, mixed with the moderately-rich loamy compost used for potting, will have the effect of causing the blooms to assume a bluish tint, watering with alum water having the same result. To have bush plants top the early-rooted cuttings, and if grown strongly the resulting shoots should each form a good flower head a year later. Plants with single heads, in 5-inch pots, fetch from 8s. to 10s. per dozen, those in 6-inch pots rather more; while the bush plants ought to realise 15s. to 18s. per dozen. Strong imported plants of H. paniculata grandiflora can be bought cheaply. They ought to be placed in pots that will hold the roots comfortably, and before forcing commences in January or

February, be cut down rather hard. All the strong resulting shoots usually give a large panicle of white flowers. They can be had in a fairly long succession, and bring 15s. to 18s. per dozen.

LAPAGERIA.

Only the white form, L. alba, is of any value for marketing purposes, the single blooms fetching from 2s. to 4s. per dozen, according to the time of year. When planted in tubs or small beds of coarse fibrous loam, peat, charcoal and sand, and growing strongly, the plants trained not far from the glass in a greenhouse temperature, large wreaths of flowers are produced during the summer and autumn. Lapagerias need close attention when first planted, taking care to protect the strong young shoots that spring up from the ravages of slugs, while well-established plants must have abundance of water. For more cultural details see page 199, Vol. II.

LILIUMS.

There is a steady demand for white liliums of all kinds, and their cultivation is fairly remunerative. Those who are successful with the Bermuda species (L. Harrissi) and its near ally, L. longiflorum, find these profitable. Bulbs of the first-named are seldom received much before September. If wanted in flower early, they should be at once potted singly in 5-inch or 6-inch pots, according to their size, or three or more bulbs may go in a 9-inch pot. A porous, loamy compost suits them, and the bulbs should be surrounded by sharp sand, in all cases leaving space in the pots for subsequent top-dressings. Arrange the pots under a bench or stage in a moderately warm house, taking care not to expose them to drip, give water if the soil is at all dry, and cover with ashes. When the shoots are showing through, clear off the ashes and gradually expose the growths to the light in gentle heat. Any old bulbs established much earlier may be forced into flower in February or thereabouts, and those started later ought, after a week's exposure to gentle heat, to flower by Easter, when they sell well. Successional batches of this lily, or of L. longiflorum treated exactly the same, only not forced, or only gently, will carry on the supply for many months. Plants retarded in the open flower in the autumn, while some of the stronger bulbs may also throw up second spikes.

Strong bulbs of L. candidum, well established in 6-inch pots by the autumn, may be gently forced, so as to have them in flower by Easter (they are not much in demand during Lent), and others for succession can be easily brought on. Hard forcing only results in a bad attack of green fly. Treat the bulbs of the white forms of L. lancifolium similarly to the other species, with the exception of starting them in cold frames. They may be brought on gently so as to have some in flower in June or July, the rest flowering later. Top-dressings would be wasted on L. candidum, but the others should have a good surfacing of coarse, rich, loamy compost directly the stems begin to show roots just above the soil.

Lilium blooms are marketed in two ways. The first to open are usually cut with short stems, the long tubed sorts fetching 2s. to 4s. per dozen, and those cut later on with long stems 3s. to 5s., according to the time of year. If timed right for Easter, when they are in great demand for church decoration, still higher prices should be obtained. Candidums and lancifoliums are similarly treated, the single blooms realising from 4d. to 1s. per dozen, and the long stems or spikes 2s. to 3s. per dozen.

LILY OF THE VALLEY.

Since the plan of retarding crowns has come into vogue, there is little or no need to resort to hard forcing, and it is now possible to have Lily of the Valley spikes in good condition all the year round. Gentle heat suits retarded crowns, and as these can be bought in large or small quantities, at only slightly advanced prices, a steady supply can be maintained for a local demand. For forcing purposes, German or Vienna crowns are much superior to those grown in Holland, and it is a noteworthy fact that the smaller, or two-year-old crowns, force the more readily, only the flower spike is smaller. The crowns, when received (clumps are heavy and too expensive), should be packed closely together in pots or boxes, yet have a little soil among the roots; and all will start the quicker if first exposed to a frost. Strong bottom heat, or, say, 80° to 85°, with abundance of water is necessary for successful forcing, and a close, darkened frame hastens growth, also draws up the flower spikes and leaves, the latter being of the delicate green colour that so well sets off the blooms. They may be had in flower in about three weeks after inserting the crowns. Before cutting the spikes expose them to light and air for a few days, and if kept till nearly all the flowers are opened on each stem, they will fetch better prices than if cut earlier. They ought not to be bunched up tightly in dozens, with all the flowers in the centre (*a*), but the leaves and flower spikes should be well mixed (*b*), and made to look more imposing by the aid of a central folded pad of moist cotton wool or spare leaves (*c*). They are then packed in blue paper-lined boxes, as shown in miniature (see Fig. 182). The very finest or "specials" realise from 12s. to 15s. per dozen bunches all through the late autumn and winter months, and the second quality 9s. to 12s. Towards the spring the prices drop somewhat. Pots may be "made up" with forced plants, but there is not much demand other than locally for them.

MARGUERITES.

There is usually a good sale for marguerites, both as plants and in a cut state, during the greater part of the year. These popular, large, daisy-like flowers (compositæ) belong to the same tribe as our familiar autumn chrysanthemums, but for decorative purposes are quite distinct. Plants of the dainty marguerites are in the greatest demand in May and June, and are popular for filling window boxes, as in these positions they thrive and present a gay appearance all through the season. In the autumn, again, they are not altogether eclipsed by their relatives, the ordinary chrysanthemums. Well-

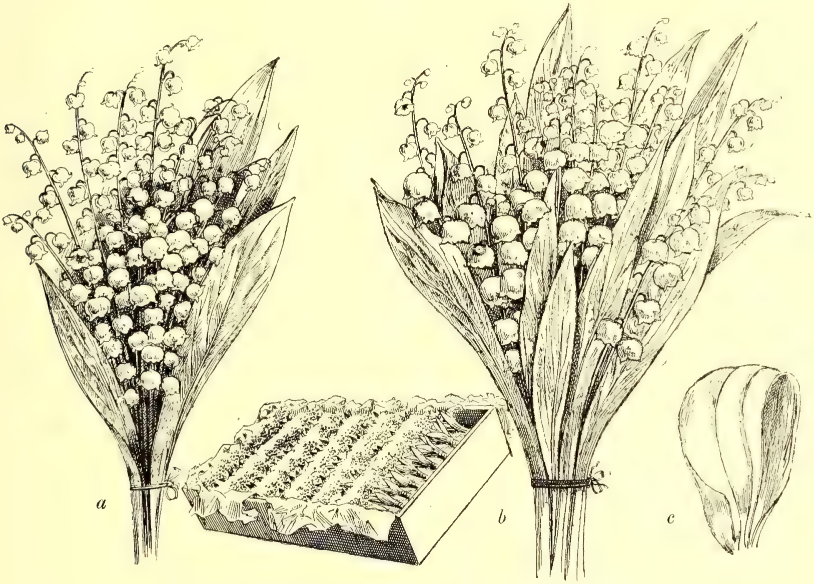

Fig. 182. Bunching and Packing Lily of the Valley (see text).

flowered marguerites, in 5-inch or slightly larger pots, in the spring fetch from 5s. to 8s. per dozen, and during the late autumn and winter months from 7s. to 10s. per dozen. The white variety, Halleri major, or other improved forms with large, well-formed white flowers, should be grown. The yellow varieties are attractive, especially in a cut state, but, unfortunately, comparatively shy flowering. The best yellow is Rêve d'Or.

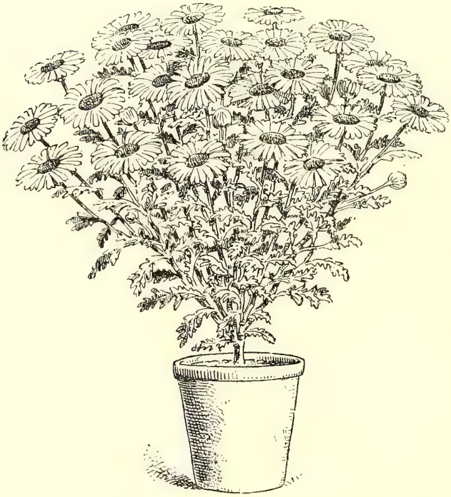

Fig. 183. Marguerite (market plant). Chrysanthemum (syn. Pyrethrum) Halleri major.

Both whites and yellows, prettily bunched, sell fairly well, the prices varying from 1s. 6d. to 5s. per dozen bunches (twelve blooms or more in each), the best prices being obtained during the winter. Since a remedy has been found for the leaf-mining maggot that used to so greatly disfigure the foliage, the cultivation of marguerites has been greatly simplified. In the autumn, or during September and October, short young tops root fully in sandy soil in cold frames, and a little later in gentle heat. They may be inserted thinly in boxes, or singly in small pots, the latter plan being the better. During the winter, shelves and light stages in a warm greenhouse are the best positions for the plants. When they commence growing strongly, all should be topped, and when fresh shoots are forming, the time has arrived for shifting into their flowering pots, using a moderately rich loamy compost, and potting firmly. If kept raised well up to the glass in a temperature of 50° to 55°, the plants will grow sturdily, branch naturally and flower profusely, as shown in Fig. 183. A successional supply may be had either by retarding some of the plants when young, or by striking cuttings at intervals of three weeks or so. All should be assisted, after the flowering pots are well filled with roots, by occasional supplies of liquid manure.

Syringing daily with clear water will usually ward off a destructive attack of maggot. Nicotine vapour generated about the plants occasionally is also a preventive. Spraying with tar-water—made by boiling ½ lb. coal tar in a gallon of water for a quarter of an hour, then diluting with fifty gallons of fresh water and stirring till well mixed—drives away the fly that deposits the eggs from which the maggots emerge to do their destructive work.

MIGNONETTE.

There is always a good sale for mignonette, both as pot plants and in a cut state, but some cultivators are much more successful in growing it than others. The demand is the greatest in the spring, and the prices, 6s. to 9s. per dozen pots, obtained at that period, pay the grower well. In provincial towns there is a good sale for mignonette in mid-winter, the wholesale prices being much the same as in the spring, and the retail price 1s. per pot. In a cut state, twelve spikes to the bunch, the prices range from 4s. to 6s. per dozen bunches, and the plants can be made to produce two crops of flowers.

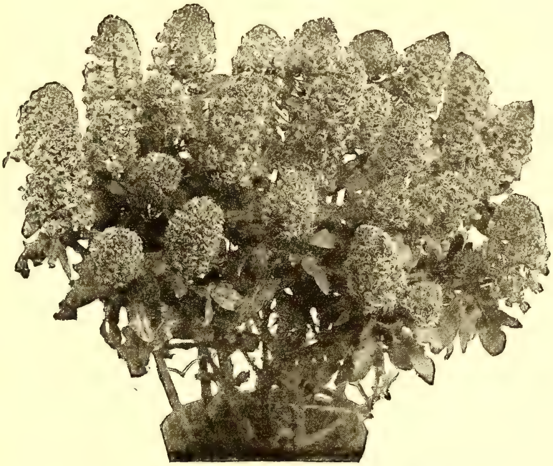

Fig. 184. Mignonette—Crimson King (Veitch).

All things considered, a good stock of the variety known as Machet is the best mignonette for pot culture; Miles's Spiral also gives satisfaction. There are two methods of culture—one by raising three strong plants in 3-inch pots in July, subsequently shifting into the 6-inch size, and topping the growths. This results, under good management, in floriferous bushes as represented in the illustration (Fig. 184) of Veitch's Crimson King, a fine bold variety not yet generally known among growers for market. The other and commoner plan is to sow in well-drained 5 or 6-inch pots, in which the plants remain to flower. Rich, turfy loam, with an admixture of fine mortar rubbish, or crushed chalk, form a suitable compost. Make this quite firm in the pots, and sow from nine to twelve seeds in each. Place the pots in a frame, keep the soil uniformly moist and shaded till the seedlings appear, then admit light and air to keep them sturdy. The first sowing may take place late in August for having flowering plants by mid-winter; from a second sowing a month later, the plants will flower early in the following spring. The seedlings ought to be reduced very early to about seven in a 6-inch pot, or five in the 5-inch size. There must be no coddling, but care should be taken not to over-water during the first six weeks, though the plants require abundance of water, varied with liquid manure, after the soil is well occupied by roots.

The best positions for mignonette generally, during the winter, are raised stages and shelves in cool, light houses, where the plants can be easily reached and attended to; they should receive abundance of air, only enough fire-heat being afforded to expel damp and exclude frost. A small hazel or privet shoot placed to each spike shows the plants off to the best advantage, and admits of rapid packing. If grown principally for affording cut bloom, the plants, after the first spikes are taken, may be arranged somewhat thickly on borders, or between rows of newly-planted tomatoes, and the roots allowed to spread into the soil. This promotes strong growth, and flower spikes are abundantly produced.

MYRSIPHYLLUM (SMILAX).

Sprays or long growths of this elegant plant (Myrsiphyllum asparagoides) are very popular among dinner-table decorators, who find them of great value for trailing about the cloth. There is the greatest demand for smilax during mid-winter, when extra long stems realise from 2s. 6d. to 3s. per dozen, and shorter ones 1s. less. These prices are frequently obtained at other times. The cost of production is not great, but those who commence smilax culture on a fairly large scale must make up their minds to attend to the plants closely during the growing season, training each growth separately, or otherwise they soon become inextricably confused.

A stock of plants can easily be raised from seeds, and this is the only method of increase worthy of following. New seed is best, and can be bought at 1s. 6d., or rather more, per ounce. It is very hard, and ought to be soaked for twenty-four hours, or till somewhat softened, in warm or moderately hot water. This should be done from January to March, sowing in pans of light, sandy soil, and placing these in brisk moist heat. When about 3 inches high the seedlings should be placed singly into 2½-inch pots, and be kept in a temperature of 55° to 65°. By the middle of June, the earliest-raised plants ought to be ready for their final quarters. They may be placed somewhat thickly in large pots, but succeed best planted in a bed or border of loam, leaf soil, a little decayed manure and sand. In this dispose them 6 inches apart, in rows 1 foot asunder, with 2-feet spaces between beds of four rows. Over each bed stretch two widths of No. 14 galvanised wire netting, the first 1 foot and the second 8 or more feet above it, for training purposes. For every growth a length of green twine or the green binding-wire used by florists should be strained from the lower to the upper line of galvanised netting, and all that is further necessary is to train the young shoots round these whenever necessary. When the growths are sufficiently matured for marketing, they may be cut and the supporting threads or wires with them, and sold as they are.

A temperature of 55° to 65° during the growing period is sufficient, and if the plants are shaded from strong sun, well attended to as regards syringing, watering and feeding at the roots, the first crop of "trails" may be cut in the autumn, and two more during the next six months or so. Young plants produce the best trails, and a fresh stock may well be raised every season. If the old plants are retained for a second year, water should be withheld after cutting the third crop, and the plants rested for about two months. Before starting the plants into active growth, remove the surface soil down to the principal roots, and top-dress with rich loamy compost. These old plants ought to have more liquid manure than was necessary during the first season. Smilax is very liable to attacks of green fly and thrips, both of which can be prevented by occasionally generating nicotine fumes in the house.

PALMS.

Extraordinarily large numbers of palms are annually distributed in this country, principally home-grown; and there is little likelihood of the demand for them falling off. On the contrary, their value for decorative purposes, whether the plants are small or large, is becoming more fully appreciated every day, no other class of plants comparing with them for either durability or effect. The more elegant species in a small state are largely employed for table decoration, quite a large trade being done with Cocos Weddelliana in 2-inch up to 5-inch pots (Fig. 185). Nearly as elegant, while much more durable, Kentias Belmoreana (Fig. 186) and Fosteriana in the same-sized pots are deservedly more popular. These Kentias are also extensively sold in 6-inch and larger-sized pots for house, conservatory, and ballroom decoration, for which purposes they have no equals. The Fan Palm, Latania borbonica (Fig. 187), is not suitable for table decoration, but single, well-grown plants are in great demand for pedestals in rooms, hotels, and restaurants. It is one of the easiest of all to grow, and in the vicinity of London, ridge and furrow glazed structures covering nearly an acre of ground have been seen, to a large extent filled with this one kind of palm, in heights ranging from 1 foot to 6 feet. Areca Baueri is also a bold, robust kind, and much grown for the markets. Phœnix reclinata is bought up somewhat closely, and this graceful, strong-growing species should receive more attention at the hands of market growers. There is only a limited demand for Corypha australis and Chamærops excelsa. They are among the hardiest of palms, but somewhat coarse and stiff in appearance. Areca lutescens is a tall-growing, elegant species, but has been largely superseded by kentias, as has the once-popular Seaforthia elegans.

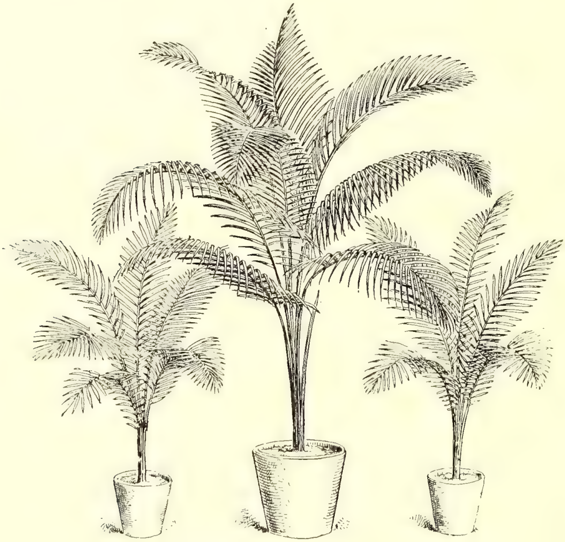

Fig. 185. Cocos Weddelliana.

Prices for palms do not vary greatly while they are in small pots. It is when they are in 8-inch and larger sizes that the differences are most observable. Kentias in particular prove their greater value when those stages are reached, partly because they have been slower in attaining to a large size. Only those raisers who have been exceptionally successful in germinating a large purchase of seeds care to sell palms in very small pots. The prices obtained for two-year-old plants average about 50s. per 100. In 5-inch pots the price for well-furnished plants ranges from 12s. to 15s. per dozen;

some growers obtain 18s. for their best. In 6-inch pots Latanias sometimes only realise 12s. per dozen, but 15s. to 18s. are obtainable in some markets. Kentias, in the same-sized pot, are worth 40s. to 50s. per dozen, leading trade growers obtaining still better prices. Areca Baueri is sold at much the same price. After palms are out of 8-inch pots they are sold at anything from 6s. to 120s. each, but only those with plenty of glass and an assured trade can afford to keep palms till they reach a large size.

All palms grown for the markets are raised from seeds, the prices of which vary considerably according to the supply and demand. The seed may be sown at any time in the year, but the best results follow the practice of sowing new seed in February or March. The older the seed the slower the germination and the weaker the plants. Sow thickly in well-drained pans or shallow boxes filled with fine loam, a little peat and sharp sand, pressing the seeds into this, and covering them rather more than their own thickness with fine soil. Brisk bottom heat, a house temperature of 75°, with uniform genial moisture, are favourable conditions to free germination. In the case of seeds with a thick hard covering, the shell should be filed through, and the seeds further soaked for twenty-four hours in hot water before sowing. Progress at first will be slow, but when two, three, or four leaves have partially developed, the time has arrived for moving the plants singly into pots just large enough to hold the roots, taking care not to bury the base of the stems, as these, from first to last, ought only to rest on firm soil. The young plants will make the most rapid progress if plunged in a mild hot-bed or cocoanut fibre refuse, on a bench over hot-water pipes. They may be arranged thickly at first, giving

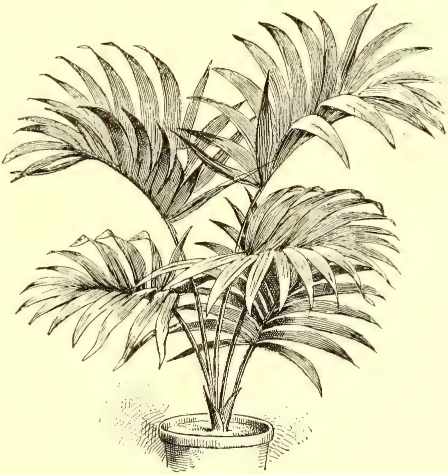

Fig. 186. Kentia Belmoreana.

them more room when this is necessary to prevent their overcrowding and spoiling each other.

Not till the pots are well filled with roots should re-potting take place, and at no time ought a large shift to be given, palms apparently thriving best when strongly rooted in comparatively small pots—a great point in their favour. For the re-potting, a mixture of equal parts of peat and loam, with a dash of silver sand, answers well, and this should always be packed firmly about the roots. Whenever a shift is given during hot weather, the plants should have extra shade for a fortnight, be watered sparingly, applying only sufficient to keep the old ball of soil and roots moist, without saturating the new soil, and be syringed frequently. The aim being to grow the plants to a saleable size as quickly as possible, the temperature should be kept at 70° to 75°, accompanied by abundance of atmospheric moisture, also affording shade from strong sun. They may be arranged somewhat closely, on ash-covered slate or galvanised corrugated iron stages, not far from the glass, and in these positions they will not become more drawn than is desirable. At the same time they must not be crowded to the extent of disfiguring the lower leaves. The somewhat drawn plants of Latania borbonica are the most valued for house decorating, though it need hardly be added they are not nearly so durable as the heavier, more slowly-grown plants.

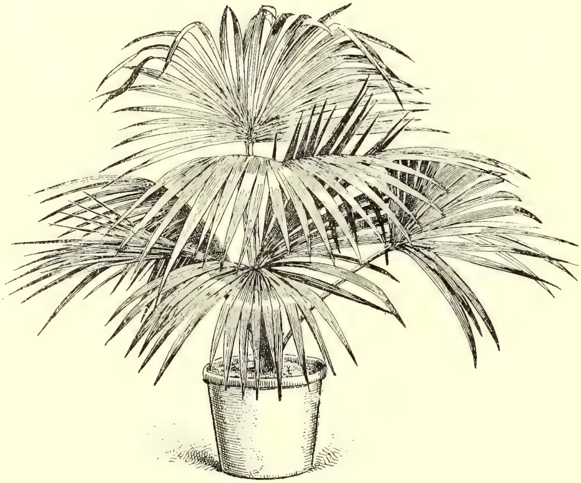

Fig. 187. Latania borbonica.

When other kinds of palms become unduly "leggy," these, with three small plants of the same species, are sometimes placed in the centre of pots just large enough to hold them without damaging the roots during the process of potting. This plan is also systematically adopted with Cocos Weddelliana, thereby forming bushy examples for decorating. Seaforthia elegans is frequently grown three in a pot, but although improved in appearance they do not appear to sell particularly well. Established palms generally are greatly assisted by frequent applications of soot water, varied by an occasional surfacing of native guano or other mild manure. Thus treated, the larger plants need not be re-potted for several years, but the soil must never get dry, or the leaves will turn pale and gradually wither away.

PELARGONIUMS.

Show (Fig. 188) and Fancy pelargoniums are fast losing their hold upon the affections of the community. One, and probably the principal, reason for this is traceable to the plants being particularly liable to be infested by aphides, although these can be kept under in greenhouses. There is yet a good demand for the large and free-flowering, Regal or Decorative, kinds; of these, plants in 5-inch pots, and just coming into flower, realise 7s. to 9s. per dozen, larger, older plants being worth rather more.

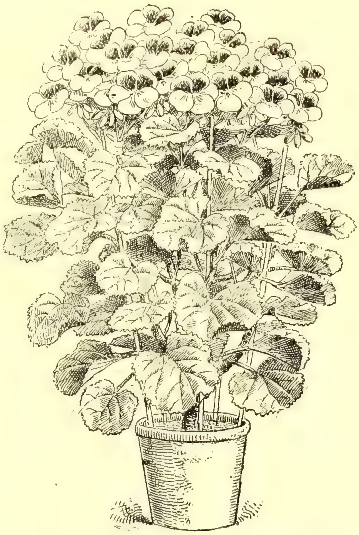

Fig. 188. Show Pelargonium. (Market plant.)

Cuttings of firm, sturdy, flowerless shoots, about 3 inches long, are taken before the plants are sold, and inserted singly in 2½-inch pots filled with sandy loam, and, if placed in frames, or on shelves in a plant house, are not slow in emitting roots. Top early to induce branching, and soon afterwards give the plants a shift into 5-inch pots. During the winter, light stages and shelves near the glass, and an ordinary greenhouse temperature, suits them. If larger plants are desired, top the young shoots, and a little later give another shift. A few sturdy shoots, however, which branch freely and flower strongly, are preferable to a greater number of feebler shoots that require staking. Liquid manure should be applied frequently to plants well established, and nicotine fumes will destroy green fly whenever it puts in an appearance, the result, probably, of too much fire-heat and insufficient water.

Zonale Pelargoniums.—Single varieties for bedding-out are in great demand every May and June, but not at other times. Double flowering varieties form an exception to this rule, well-flowered plants in 4-inch pots sometimes realising 4s. per dozen, wholesale. Strong, autumn-rooted plants give the best results. There is also a fairly good demand for cut flowers of semi-double scarlets, notably the improved Raspail, these selling at the rate of 4s. to 6s. per dozen bunches, of twelve trusses in each. The semi-double white, Madame Rozaine and Cynthia, are also profitable, being wanted for memorial wreaths and crosses. These, if grown under glass, will sell at any time of the year, bringing from 8s. to 12s. per dozen bunches.

For winter flowering, the tops of firm shoots should be inserted singly in small pots not later than March, and rooted in brisk, dry heat. Top to make the plants branch, and a week later shift them into 5-inch pots, arranging them in a light position, in gentle heat. From these pots they may be transferred to the 8-inch or 9-inch sizes, and moved into frames. During the hottest part of the year they should be stood on ashes, in a sunny position outdoors, topping them once more, if not sufficiently stocky, also removing flower-buds as fast as they form. House early in September, arranging the plants thinly on stages or beds of soil not far from the glass. They will flower abundantly all through the autumn and winter in a dry atmosphere and temperature of 45° to 55°; give liquid manure occasionally and avoid over-watering. Raise a fresh stock of plants every spring, these flowering better than the old ones.

POINSETTIA.

For Christmas decorations only does it pay to grow poinsettias. About that time sturdy plants in 5-inch pots, with fine whorls of brilliant bracts (Fig. 189), fetch from 7s. to 9s. per dozen in the trade, and cut heads with a good length of stem average 6s. per dozen; a few extra fine ones bring as much as 12s. There is an early form of Poinsettia pulcherrima, of sturdy habit of growth, and comparatively easy to cultivate; but this is past its best by mid-winter, and scarcely pays to grow. The old, taller-growing variety forms larger and somewhat irregular whorls of scarlet bracts later, and this only ought to be grown to meet the Christmas demand.

If possible, the start should be made with a few old plants. These having been duly rested in heat, ought, early in May, to be re-started into growth by a good soaking of water and a change to a moister atmosphere. As often as the young shoots, formed on the stems, attain a length of about 3 inches, take them off with a heel, plunge the base in sand to stop bleeding, insert singly in small pots of sandy loam and peat, and plunge in brisk bottom heat, covering with a propagating frame or hand glass. Little or no water need be given the first three days. When rooted move them to shelves, and soon after give them slightly larger pots. The plants must still be grown in heat, and, if strong, ought early to be given a final shift into 6-inch or slightly larger pots, using good loam with a little leaf soil, decayed manure and sand. When well established in their flowering pots move into frames or pits, where they should be kept moist at the roots, shaded during the hottest part of the day, and afforded abundance of air. Late in September transfer the plants to a light position, in a house where the temperature can be kept at about 55° at first, increasing this when the floral heads are beginning to develop to 60° and 65°. Weak liquid manure should be applied frequently at that time. The old plants, after cuttings have been taken, may be cut down, a week later shaken nearly free of soil, and re-potted, using the same size or slightly larger pots than they were in formerly. Subsequent treatment should be the same as recommended for young plants, and each should then give three or four floral heads.

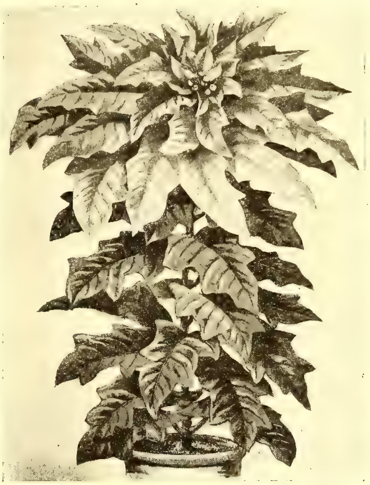
Fig. 189. Poinsettia pulcherrima. (Market plant.)

PRIMULAS.

For single Chinese primulas there is a limited local sale, the plants being required for conservatory and greenhouse decoration. Plants in 5-inch pots sell to the trade occasionally at 6s. per dozen, those in 6-inch pots fetching 9s., retailing at 9d. and 1s. each respectively. April and May are good times for sowing, plants raised earlier losing their first central truss before they can be sold. Pans, or well-drained pots, should be filled with a mixture of fine loam, leaf mould and sand, and this moistened, the seed soon after being sown on the surface and pressed into the soil. If covered with squares of glass, shaded, and kept uniformly moist, the seed germinates quickly and surely in gentle heat. Keep the seedlings sturdy by exposing them to the light, and, when large enough to handle, place them singly in small pots, taking care to bury the stem. After they are well-established in the small pots transfer to cold frames, and before they become much root-bound, shift into 5-inch pots. They thrive well in a mixture of two parts loam to one of leaf soil, with a free admixture of sand. After a shift has been given, keep the frames somewhat close for a few days. At other times afford abundance of air, and if the frames are arranged with the high backs to the south, not much shading will be needed. Spraying and dews are beneficial to primulas. Flower them in light greenhouses, not crowding them at any time. Liquid manure improves the size and colour of the flowers, and genial warmth should be maintained. See also page 91 *et seq.*, Vol. II.

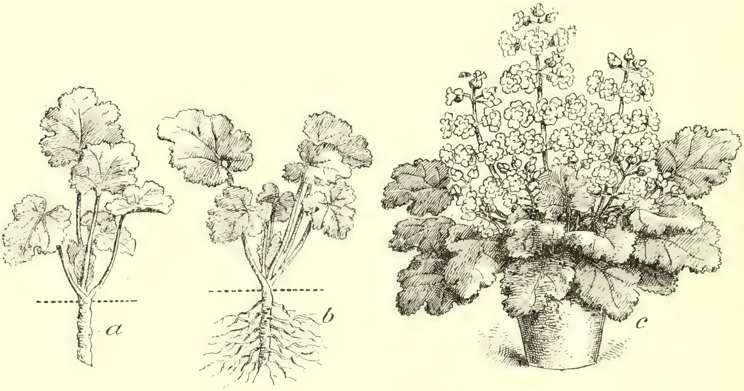

Fig. 190. Primula, old Double White.
References: *a*, cutting; *b*, offset; *c*, flowering plant.

Double white primulas are decidedly profitable. Strong plants flower freely all through the late autumn and winter months, especially. The flowers are cut for sale frequently; they fetch 4d. and 6d. per dozen trusses. Flowering plants in 5-inch pots can also be sold to the trade at 6s. to 9s. per dozen. The semi-doubles raised from seed are of little value from a market-grower's point of view; nor are the larger double forms, white or coloured, as they are neither easy to increase nor so constantly floriferous as the "old double white" (Fig. 190). Strong plants of this, after flowering, can be propagated by division in March or April; those portions with roots attached being placed singly in pots just large enough to hold them, and kept in gentle heat till well established, when the plants may receive a shift, and soon after be moved to shallow pits or frames. The unrooted divisions should be placed singly in small pots, not burying the hearts, and, if not over-watered, roots will be emitted in a close, warm frame. When rooted, expose the plants to more light and air, and re-pot as advised for the seedlings. Another good method of raising plants is as follows: After flowering is practically over, remove the leaves from the lower part of the stems, and pack moss tightly about them. If placed in a cool frame, and kept close and moist for about three weeks, roots will be formed on all the stems, when the rooted portions should be separated and established in pots. All through the winter the plants of double white primulas ought to be arranged on light stages, or shelves, by themselves in a warm greenhouse, in which a rather dry atmosphere is maintained.

PRIMULA OBCONICA.—This is among the most floriferous and easily-grown winter-flowering plants we have, though it affects the skins of some people with which the leaves come into contact. A limited number of plants can be sold at the prices given for Chinese primulas, and cut flowers sell locally at 6d. per dozen. The plants can be easily raised from seed, sowing rather earlier than advised for the other kinds, but in other respects treating them much the same. They may also be increased by division of old plants, but seedlings are the more robust, and produce the finer trusses of flowers.

ROSES.

There can be no two opinions regarding the popularity of roses, but market-growers make a mistake when they start growing a considerable number of varieties under glass. The number of sorts that really pay to force are surprisingly few. The popular colours are crimson, red, white, pink, yellow, and bronze, intermediate shades not "taking" so well. Only a few hybrid perpetuals are extensively forced, and the most profitable of these are General Jacqueminot, crimson; and Mrs. John Laing, pink; La France, silvery rose; and Meteor, red. Hybrid Teas are profitable, owing to their continuous flowering habit. The white most extensively grown is the old tea-scented Niphetos; another Tea, the Bride, produces more perfect blooms, but fewer in number. Papa Gontier, Catherine Mermet, Maman Cochet, and Bridesmaid, are pink teas in great demand for bridesmaids' bouquets; those are all profitable varieties. Marechal Niel is still the favourite yellow, though climbing Perle des Jardins is a strong rival. W. Allen Richardson is the favourite coppery yellow. The last three are suitable for roof-culture, and to them may be added Lamarque, creamy white. Prices of cut roses vary from 1s. to 3s. per dozen, according to circumstances.

Full instructions as to propagation were given earlier in this work (page 166, *et seq.*, Vol. I.), but so cheaply can dwarf plants be bought that few market-growers attempt to raise their own stock. Strong young bushes, worked low, from the open ground, give better returns the first season than do the majority of small plants bought in pots. Exceptions to this rule may be made in favour of Marechal Niel and Lamarque. The autumn, or as soon as roses can safely be lifted, is the time to buy them, the potting taking place at once. All should have their roots trimmed and tops shortened, not severely pruned, when placing the plants in pots, the sizes employed varying from 6 inch to 8 inches in diameter. They should be well drained and the potting done firmly, sinking the stems rather deeply, in rich loamy soil. Arrange the plants in beds, surrounding the pots with either ashes or strawy manure, and, thus treated, root action will commence before wintry weather sets in. The teas and noisettes not being perfectly hardy, may well be protected from severe frost by means of litter scattered over them and between the pots.

Early in the year all the teas and hybrid teas should be rather severely pruned, after cutting entirely out the spray-like stems. The plants may then be started into growth in a light position where they are not exposed to currents of cold air at any time, as this brings on an attack of mildew. Raised, ash-covered benches suit them admirably. Commence with a temperature 45° to 50°, and maintain a fairly moist atmosphere. When the buds are showing, increase the temperature to 50° at night, 55° by day, rising another 5° or more in bright weather. As the days lengthen the temperature may be increased another 5° all round, and when it is necessary to ventilate, open the top lights only, closing early and syringing at the same time. Cut the blooms with a long stem, as this adds to their value from a buyer's point of view, and the successional growths flower all the better for this pruning. If kept well supplied with water and liquid manure, also free from green fly and mildew, tea roses will continue to produce blooms as long as there is a sale for them, when the plants should be rested in pits or in the open, giving them a shift into larger pots in July or August, pruning and commencing forcing again in October or earlier. La France and

Meteor thrive well under this treatment, established plants producing good blooms by midwinter and continuously afterwards.

There is a demand for house-grown white roses all the year round, and, to meet this, Niphetos is, in many establishments, planted out permanently in beds under glass. Other tea roses may be profitably associated with them. Raised, slate-covered benches, with fronts deep enough to hold about 6 inches of good loamy soil, answer well. Roses growing in a great depth of soil do not force so readily. Strong young bushes may be planted from 12 inches to 15 inches apart in July, or after early crops of cucumbers or tomatoes. There must be no sharp forcing at the outset. Maintain a genial temperature and moist atmosphere, also keep the soil about the roots uniformly moist, and syringe once or twice daily in bright weather. Prune the bushes early in September, and soon after turn on a little fire heat, forcing gently from that time onwards. If the plants are rested during the summer they will pay for keeping a second year, but the young bushes always produce the finest blooms. After pruning in September, remove the surface soil, well moisten the bed with liquid manure and top dress with loam and good solid manure.

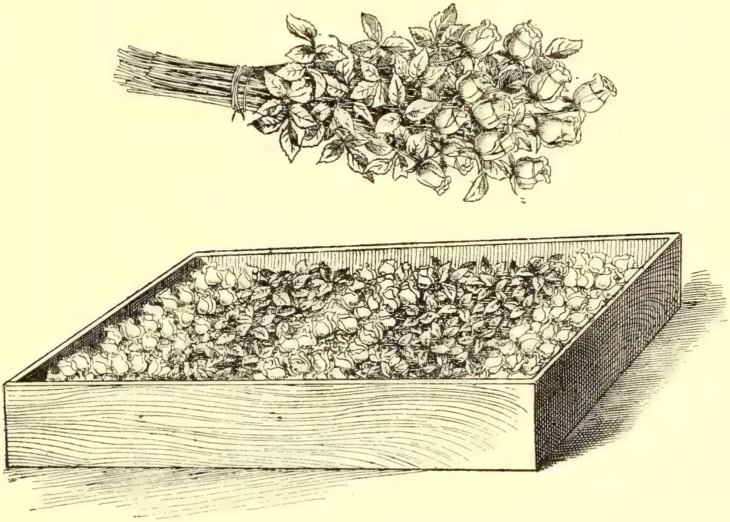

Fig. 191. Roses—bunching and boxing for market.

Climbing Perle des Jardins and the noisettes, Marechal Niel, Lamarque, W. A. Richardson and L'Ideal succeed best planted out, and trained either thinly over a roof trellis or the growths affixed somewhat close together up the rafters of rose houses. The noisettes ought not to be pruned till after they have produced a good crop of blooms, when the stems should be cut back to the base of the rafter, with a view to securing numerous long and strong growths to bloom the following season. Marechal Niel does not last long in many places, and young plants should be brought on to take the place of failing old ones.

Hybrid perpetuals in pots (it seldom pays to devote houses permanently to them) may be closely pruned when the leaves fall, shortening each strong young growth to the fourth or fifth bud from the base, the weaker shoots still closer, and in gentle heat; successional plants treat similarly at intervals of about three weeks. They should have a light position, where no cold winds can reach them, attending closely to watering, feeding, and syringing, as only strong, healthy shoots produce blooms worth, say, 2s. to 3s. per dozen wholesale. Allowing the plants of this section to flower a second time has a weakening effect, but is often done. Rest the plants during the summer in the open, re-potting by partly reducing the size of the old ball of soil and roots before the leaves fall. Treated in this way roses may be kept strong and healthy in comparatively small pots.

For sending to market, roses are cut "young," or when the blooms are in process of development, a strand of raffia being tied round many of them for retaining their firmness and shape. They are arranged in rather flat bunches, and a dozen of these closely packed in a box (Fig. 191), so that the 144 blooms reach their destination in the best possible condition, otherwise much of the cost of production would be wasted.

SOLANUM.

Well-berried plants, of a good form of Solanum capsicastrum (Fig. 192), find a fairly ready sale towards mid-winter. They are grown principally in 5-inch pots, and realise from 5s. to 9s. per dozen, according to the quality of the plants. Wetherill's Hybrids, raised from seed, give the largest berries, but in habit of growth they are coarse, and not popular among market-growers. The smaller, freer fruiting forms may also be easily raised from seed, but the best-berried plants are obtained from cuttings. Before fruiting plants are sold, the requisite number of young tops are taken off, without disfiguring the plants, and rooted in brisk heat, in a close frame. Top the young plants to make them stocky, and place singly into 2½-inch pots, growing in gentle heat. Unless sufficiently bushy, top closely a second time, and before the plants become root-bound shift them into 5-inch pots, using a rich, loamy compost. Shallow pits or frames are good positions for them up to June, when they may be plunged in ashes, in a sunny place in the open air. They must be well looked after, a serious check of any kind resulting in the loss of much of the foliage. Afford water as needed, alternating with liquid manure, and give the pots a twist round occasionally to prevent the roots spreading into the ashes or soil below. The plants flower and set fruit thickly under this treatment, ripening commencing when they are housed late in September. A cool house is best for solanums, taking particular care not to let them get dry at the roots when they are first moved from the open. If the fruit is late in colouring, gentle heat will soon bring about the desired change. Planting out solanums answers well as far as free growth and fruiting are concerned, but they cannot be placed in sufficiently small pots in the autumn without crippling them.

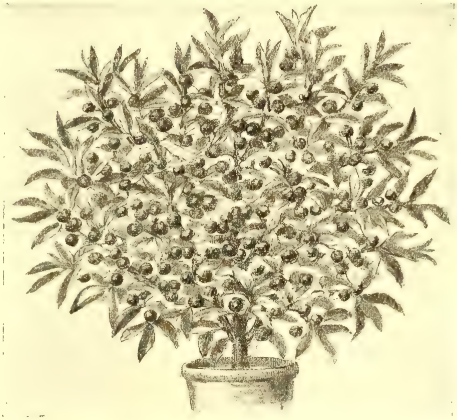

Fig. 192. SOLANUM CAPSICASTRUM. (Market plant.)

SPIRÆAS.

Spiræa japonica is extensively forced in this country, and as it retains its popularity among buyers forcing is fairly remunerative. The compact form finds few admirers, largely owing to the fact of the foliage not keeping fresh and green. S. astilboides and the dwarfer form, S. a. floribunda, are fast becoming as popular as S. japonica. They can be had in flower more quickly, the type (S. astilboides) being the earliest by about a fortnight. Both forms grow stronger and produce larger leaves and better spikes of flowers than S. japonica, but they are usually fewer in number. Good spiræas in pots occasionally sell in the early spring months, fetching from 6s. to 8s. per dozen, while the spikes of bloom realise from 5s. to 9s. per dozen bunches of twelve sprays, according to their condition and the time of year. See also page 229.

Spring frosts mitigate against the home preparation of plants for forcing, but clumps are imported extensively from Holland and Belgium, small quantities costing, by the time they are received, about 9s. per hundred. These clumps are usually severely reduced in size, this effecting a saving in the cost of carriage, and admitting of their being placed in 6-inch pots. It is well to pot them soon after they are received, packing rich soil round the clumps, and leaving sufficient depth for watering. Store in cold pits and frames till wanted. Forcing may commence in November, brisk heat, moist atmosphere, light positions, abundance of water and liquid manure being essentials to success. Successional batches are introduced every three weeks or so, taking care to reserve abundance for flowering at Easter. It does not pay to keep the old clumps to flower a second time.

STEPHANOTIS.

Much of the stephanotis to be seen in the markets is sent from private gardens, but there are also a number of trade growers who cultivate this fragrantly flowered plant successfully. Those who have a good local connection find stephanotis of the greatest service in wreath and bouquet-making, and the surplus trusses sent to the principal flower markets realise from 2d. to 4d. per dozen. Naturally the prices are largely affected by the quality and number of pips, and also whether they are clean and fresh or not. Mealy bug is the one great hindrance to successful culture of the stephanotis in many establishments, plants infested with this pest being anything but profitable. The start should be made with perfectly clean plants, and a close look-out must be kept for any odd insects that may find their way to them, as destroying these promptly is the best preventative of serious infestation. Stephanotis ought always to be trained near to the glass, as shown on page 314; nowhere else will the stems flower freely. An ordinary stove temperature is desirable, also shade from strong sun. Cultural details will be found on pages 30-33 of the present volume.

TUBEROSES.

There is a constant demand for flowers of tuberoses, these fetching from 3d. to 6d. per dozen blooms, at which price they pay well. The American Pearl is the favourite with market-growers, very few African bulbs being grown, and these only to flower early in the year. Pearl is of a sturdy habit, forming a strong flower spike, and producing large double, pure white blooms. Although the bulk of the tubers reach this country early in the year, it is possible to maintain a constant supply of flowers, say from March to midwinter, by starting the forcing of a portion of the bulbs directly they are received, introducing others successionally throughout the season, and retarding large quantities in the open for flowering during the autumn, and the early part of the winter.

Sound, heavy, but not extra large tubers are the best, these costing from 40s. to 50s. per 1,000. Let those which are not potted early be kept cool and dry, but all should be in their pots by the end of May. Before potting, clear the tubers of all side growths, sinking them to two-thirds of their depth in rich, loamy soil, either singly in 5-inch pots, or three in each 6-inch pot. Forcing in a temperature of 60° to 70° may commence directly the bulbs or tubers are received. Later batches for continuing the supply, may be started in gentle heat. They answer very well with the pots buried in cocoanut fibre refuse, under stages and similar positions till growth starts, and can then be introduced into, and grown in, light positions as desired. Little water is needed at first, applying abundance, varied with liquid manure, when the soil is well occupied with roots. Syringe freely to keep down red spider.

Flower spikes will be produced by nearly all the tubers, more or less irregularly, and should be supported with stakes. When all the flowers have been gathered, throw away the plants and make room for more. The later batches ought to have the shelter of cold frames at first, but all through the summer may be grown quite in the open, placing the more forward under glass, before the flowers open, and the remainder before September frosts cripple them. The retarded plants will give fine spikes of bloom in gentle heat. From first to last, bottom heat may be dispensed with.

VIOLETS.

Violet culture partakes somewhat of the character of a lottery. During a mild autumn and winter the flowers are so plentiful that the prices are too low for the crops to be remunerative, while a severe frost may damage the plants to such an extent as to quite mar the season's prospects. This applies to the hardier Russian Violets, including the old Czar, also the newer and finer forms, such as Princess of Wales, Queen Victoria, and the distinct Amiral Avellan (misprinted "Arvan" on page 126, Vol. II.). These at times sell at 1s. to 1s. 6d. per dozen bunches of twelve to eighteen blooms, according to their size, and with no long checks from frost the crops pay well. Double violets of the Marie Louise type, are not quite so much in demand as formerly, and when, as often happens, they have to be sold at the same price as singles, they cannot be very remunerative to the cultivator. With a steady local demand the case is somewhat different, as this means 3d. to 6d. per bunch retail.

In the neighbourhood of Cheltenham violets are a speciality with a few growers, who send them to all parts of the country. Spaces between rows of dwarf and tall plum and damson trees are devoted to violets and alternating crops. In favourable seasons heavy crops of plums are obtained, while the violets, when doing well, are crowded with flowers. Every summer a breadth of old violet plants is left untouched long enough for the seed in the pods to mature, when they are dug in. The ground is further cultivated and cropped with potatoes. In the autumn innumerable seedling violets appear, and these are duly transplanted to their flowering quarters the following spring.

The plan most generally followed among market growers is to plant well-rooted runners or divisions obtained by lifting the requisite number of strong old plants in April, pulling these to pieces, and saving only the smaller outside divisions and destroying the old crowns. These rooted divisions are planted 9 inches apart in rows a foot or more asunder on deeply-dug, moderately rich ground, and watered if the weather be dry. Mulching with short manure is of great assistance to the plants, especially during hot and dry summers. Illustrations on increasing violets may be found on pp. 124, 125, Vol. II. Frame culture is also there fully described, and a list of varieties given. See also Index for coloured plate.

VARIOUS PLANTS.

A variety of other plants are cultivated by market-growers either for sale as pot plants, or for affording cut flowers. Cultural details of several of these may, on consulting the Index, be found in the earlier part of this work.

Indian Azaleas.—These plants are grown so well on the continent, and can be bought so cheaply, that few home growers care to propagate them. Semi-double white-flowering varieties are in the greatest demand, though none so much as Deutche Perle. Madame Vermeeshe is by some considered superior to the last-named, and will eventually supersede it. Either can be had in flower from November till Easter, plants forced moderately hard one season flowering in the next very early without forcing, these providing a long succession of bloom rather than a mass at one time. Cut with a short stem and bind to small sticks, one dozen to each for a bunch, which sell in the markets at 6d. to 9d. per dozen. Fielder's white, a strong-growing old favourite, gives large, pure white flowers at Christmas. Cut with long stems, they sell locally at 1s. to 1s. 6d. per dozen, but the flowers do not travel well. Of the later varieties there are few, if any, to surpass Bernard Andreas and A. Borsig. The plants are principally imported as dug up out of pits, and should be placed in pots only just large enough to hold the roots. They may remain in these pots two seasons, receiving only a small shift at any time, pressing the soil down firmly. Keep them in gentle heat till the young growth has been completed, and do not neglect them at any time.

Deutzias.—The white sprays of flowers do not stand well after they are cut, but small, well-flowered plants of D. gracilis find a fairly ready sale at 6s. per dozen. They may be imported, or raised from cuttings. Plant out till large enough to lift and force. Head the plants down, if unsold, after flowering, and either re-pot or plant out. Gentle heat is sufficient to bring them on. Easter is the best time to have a large number of plants in flower.

Dracænas.—Largely grown for the markets, the hardier green-leaved varieties, including indivisa, australis, Bruanti, congesta, discolor, and gracilis, are in the greatest demand; well-furnished plants of these, in 5-inch pots, sell at 9s. to 12s. per dozen. Of the coloured leaved stove varieties, the old Cooperi, terminalis and Fraseri still retain their popularity, and mention may also be made of Alexander Laing, Lindeni, Lord Wolseley, and Sanderiana. Good plants of these, and some others, fetch 2s. each.

Ericas.—Floriferous heaths are made a speciality of by a limited number of growers, who make them pay well, but novices seldom succeed in producing saleable plants. Anything in the shape of fire-heat is injurious to ericas, and the water in many districts does not agree with them. Among the most saleable kinds are, caffra, candidissima, cerinthoides, coronata, gracilis autumnalis, hyemalis (Fig. 193), melanthera, persoluta alba, ventricosa of sorts, and Wilmorei. They are sold by the trade, principally in 5-inch pots, at from 9s. to 18s. per dozen. Epacrises can scarcely be "given away" in many districts. For cultural details see page 184, Vol. II.

Ficus elastica.—The india-rubber plant well retains its popularity, standing the gas well, but the variegated form does not sell so readily. Strong plants of the first-named, in 5-inch pots, sell at 12s. to 15s. per dozen, those in 6-inch pots fetching from 21s. to 30s. per dozen. The prices for the variegated form are, respectively, 24s. to 30s. and 42s. Strong plants are the most quickly raised from tops, but long, firm, leafy growths may be cut up into as many pieces as there are leaves, and rooted singly in small pots and brisk heat.

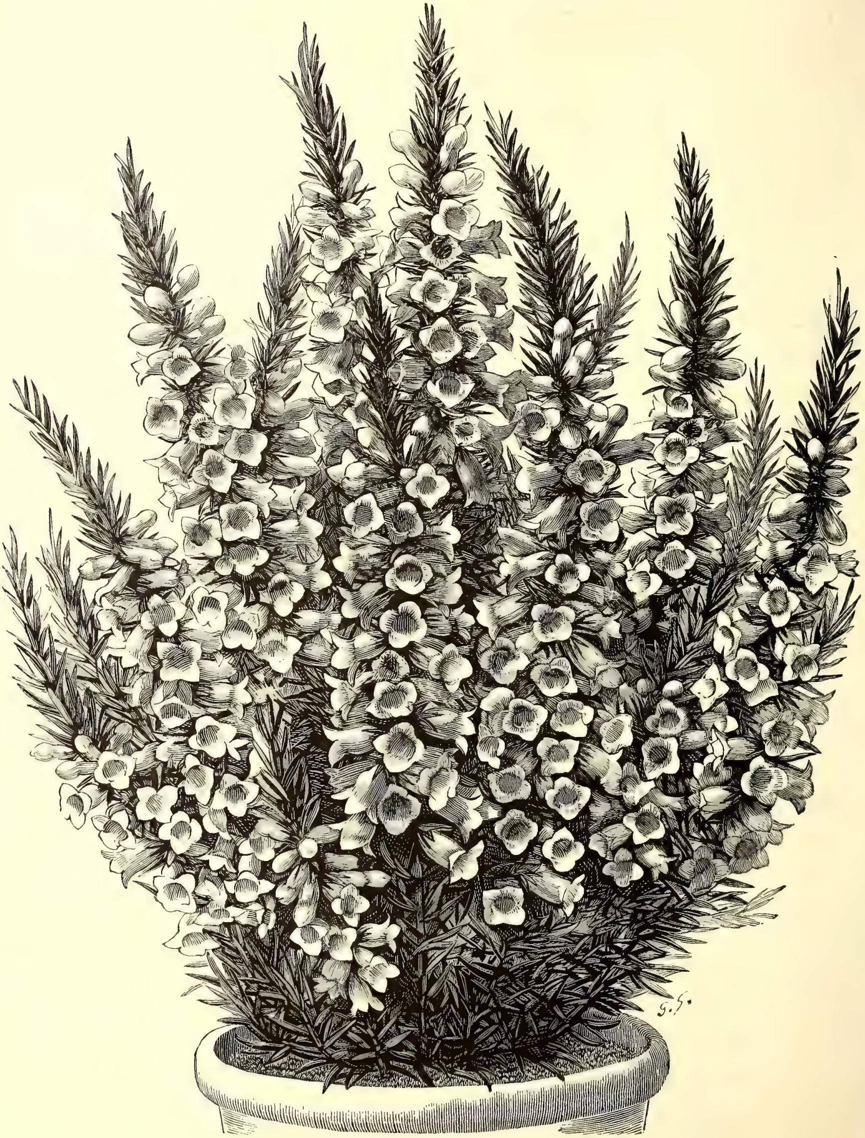

Fig. 193. Erica hyemalis.

Fuchsias.—Plants of the Mrs. Marshall type, or other varieties that form a good, natural, branching leader, and flower abundantly, are grown for the markets in fairly large numbers. Young shoots are either rooted in the autumn, and the plants kept growing in gentle heat all through the winter for selling in April, or else the cuttings are rooted in February, and the plants are ready about the time window-boxes are filled with their summer occupants. They are flowered in 5-inch and 6-inch pots, and sell at 6s. to 9s. per dozen.

Lilacs.—In common with a variety of other deciduous and other shrubs for forcing, Lilacs can be bought more cheaply than the florist with limited nursery room can grow them. They are largely imported from France, and ought to be ordered early, well set with flower buds. The popular forcing lilac in England is known as Charles X. This grown in the open gives large panicles of lilac-coloured flowers, but when forced in a shaded position, the flowers are white and the leaves a delicate green in colour. The French much prefer the "Marly Lilac," and the flowers are variously tinted by gradations of light through perforated mats used in shading. They are also expert in producing large elegant bunches with a few spikes, by passing the stems through mushroom-shaped pads of damp straw, as shown in the outline sketch (Fig. 194). Alba virginalis, white, also forces well. It does not pay to force any varieties that are not white, or cannot be blanched to the requisite whiteness. Forcing should be slow at first, the development of flowers and leaves taking place best in a moist atmosphere and temperature of 50° to 55°, increasing to 60° and 65° after growth has well commenced. The bushes are of no use for forcing two years in succession, but should be planted out till they are again well set with flower buds.

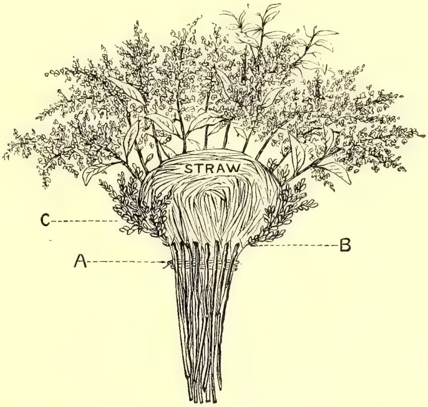

Fig. 194. Bunching French Lilac.

References.—a, damp straw pad; b, flower stems passed through; c, fringe of box sprays for obscuring the straw.—*Journal of Horticulture.*

Orchids.—These are grown extensively on the continent solely for meeting the demand for cut blooms, and doubtless the industry, as carried out by those who make a speciality of it, proves highly remunerative. Odontoglossums, more particularly the Alexandræ or crispum section, are always in demand, and are particularly valuable for working into "shower" bouquets. Large numbers can be grown in comparatively small houses, in which case the spikes of flowers are nearly always showing, and the less the amount expended in their production by fire-heat above 50° the better. Dendrobiums are very different, these requiring strong heat at times, but they do not occupy much space and are very floriferous. The Phalænopsis Schröderi section is valuable. Cattleyas, Trianæ, Mossiæ, Gaskelliana and labiata afford a long succession of flowers, and where large numbers are grown they are rarely without few or many flowers fit to cut. Oncidiums, flexuosum and varicosum Rogersi are profitable yellow orchids, admirably adapted for making into sprays and mixing in hand bouquets. Lælia anceps alba, flowering at mid-winter, is particularly valuable. Cœlogyne cristata and its varieties, with Lycaste Skinneri, Cypripediums, insigne, Spicerianum and Leeanum are all worthy of being grown extensively, and the list of profitable orchids might be extended still further if we had not already treated fully upon the subject in the chapter commencing on page 58 of this volume.

FLOWERS FOR BUNCHING.

Flowers, more or less of a hardy nature, suitable for bunching are fairly numerous, and in some localities are grown in large quantities. The sale for them in the great flower markets is uncertain, and small growers who supply them on commission may sometimes not be paid for the trouble of bunching. Only those who can sell large numbers locally are advised to commence their culture. In some towns there is a great demand, especially on Saturday evenings, for cheap bunches of flowers, neatly arranged, of which violets, Fig. 195, may be taken as an example, and it pays well to cater for the class of customers indicated. White flowers are generally the most profitable.

ANNUALS AND BIENNIALS.—Large beds of asters, especially "Comets," may safely be grown, the best prices being realised for whites, early and late in the season. Acrocliniums, being of an everlasting nature, may be grown for drying and bunching. Campanula media calycanthema, an easily grown hardy biennial, is fairly remunerative; so also are the best forms of white candytuft and marguerite. Carnations treated as annuals produce large numbers of flowers in August, and, till severe frost cuts down the plants, usually pay for growing. Annual chrysanthemums are attractive bunching flowers, and the same may be said of annual coreopses. Blue cornflowers are in good demand at times, and dianthuses are also handy for bunching. Annual gaillardias of the picta type are not much wanted, and ornamental grasses can often be bought more cheaply than they can be grown, though a few of the more elegant sell well occasionally for table decoration. Helichrysums scarcely pay for growing, but there is a fairly good demand for the white bleached seed-pods of Honesty (Lunaria biennis). Not many marigolds are wanted. Mignonette at times pays well, but nemesias are failures. Pansies, purple in colour, are frequently massed in wreaths and crosses, and pay for growing. Phlox Drummondi mixed, also pink and white, separately, are saleable, and there is a good demand for Iceland poppies (Papaver nudicaule), which should be treated as biennials. Stocks, notably Princess Alice, and other good whites, not forgetting the hardy Bromptons, often pay their growers very well; but there is not so much to be made out of sweet peas as formerly. Sunflowers, Sweet Sultan, and Zinnias are favourite flowers with some buyers, while wallflowers are among the most profitable of all bunching flowers.

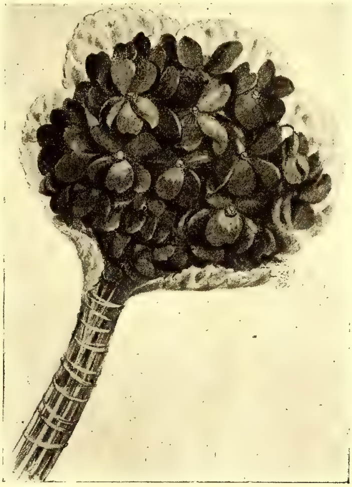

Fig. 195. Neatly Bunched Violets.

Hardy Perennials.—Achillea Ptarmica flore pleno, which spreads rapidly, is of service early in the summer, as it is largely employed for the foundations of cheap wreaths. Bupthalmium cordifolium is imposing in bunches, and pays for growing. The best of the Campanulas for bunching is C. persicifolia alba, this flowering in July and August. Carnations, both named and seedlings, pay many growers well. Chrysanthemum maximum, as flowering later than the wild Ox-eye Daisy, is useful, while columbines, or aquilegias, bunch up prettily and sell well. Doronicum plantagineum excelsum, syn. Harpur Crewe, is a general favourite. Gaillardias are fine for bunching and those who can grow the blue gentian (Gentiana acaulis) well will find it profitable. Gypsophila paniculata is in great demand. Helianthuses (sunflowers), in variety, flower abundantly and pay for growing, as also do white hellebores (Christmas Roses). Hemerocallis flava bunches up well, and the free-flowering Heucheras—bracteata and sanguinea are worth growing. The same may be said of German irises. Lathyrus lactifolius albus is the only variety of Everlasting Pea that pays for growing in quantity and is especially good for memorial wreaths. Phloxes are not popular, as they soon wither. Physalis Alkekengi (or winter cherry) pays for growing in quantity, as its sprays of scarlet seed pods are in great demand for harvest festivals. Pyrethrums, single and double, are good for bunching as also is the bright yellow Rudbeckia Newmanni.

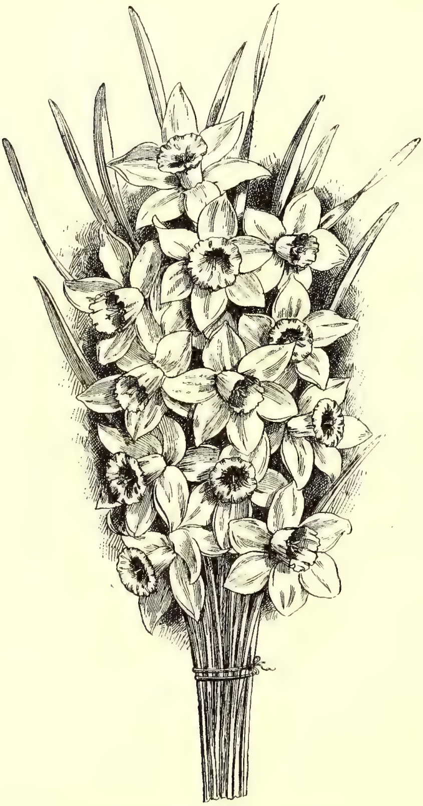

Fig. 196. Market Bunch of Daffodils.

Bulbous and Tuberous-rooted Plants.—These comprise many kinds that pay well for cultivation separately in large beds, the flowers becoming available after the Scilly and Channel Islands' supplies of cut blooms are exhausted. Alströmerias flower freely and bunch well, as also do various anemones. Daffodils and Narcissi are immensely popular, and beds of the choicer large trumpet varieties are profitable, bunching the blooms as shown in Fig. 196. The medium trumpets, including the double-flowering sorts, white and yellow, and the early and late poeticus varieties also pay for growing in quantity. Hyacinths, first flowered in pots or boxes and then planted out, flower freely, but it does not pay to plant imported bulbs to afford spikes for bunching purposes. Irises, Spanish and English, are fairly profitable. Snowdrops are grown in some districts with advantage. Tulips may be planted out after flowering in pots, but on the whole are not very profitable.

FLORAL ARRANGEMENTS.

Fashions change with these as with many other things, and what is correct to-day may soon be out of fashion. There are, however, a few primary details to be mastered, which, once acquired, render it comparatively easy to keep pace with any changes or innovations that may take place in the fashionable world. All who would succeed as florists of the mechanical order, as distinct from the grower of plants, should strive to establish a reputation for lightness and taste in the arrangements of flowers, whether these are in bouquets, baskets, or memorial emblems. In particular ought they to be equal to properly carrying out instructions from their patrons, thereby gaining both credit and experience, which means considerably enhanced profits. It is not those who grow flowers for the markets who make the most out of them; the lion's share of the profits go to the particular class of florists who obtain such high prices for the bouquets and other forms supplied by them to their various customers. With these people close, heavy masses of flowers have long since been discarded in favour of something bold, light, yet economical, as far as materials are concerned, yet tasteful and pleasing. This is alike creditable to purchasers and satisfactory to vendors.

A free employment of wires has not only obviated the retention of long, heavy flower stems, but also admits of many short-stemmed flowers being marketed that would otherwise be wasted. Wires are also employed for holding some flowers, roses, for instance, together and for strengthening weak or brittle stems, only those who go behind the scenes fully realising how much mechanical art is brought to bear upon the florist's work. All this "wiring" has, or ought, to be done so neatly as to be scarcely seen by superficial observers; and the hints to follow on this subject will have to be supplemented by a certain amount of natural aptitude and studious practice before the novice can attain the proficiency of the expert.

Wiring and Mounting Flowers.

The stock-in-trade of a florist, as far as working materials are concerned, need not be either extensive or expensive. Annealed bouquet or stub wire, which is used in mounting flowers for wreaths and other emblematical designs, is bought by weight, and principally in bundles of 7-inch lengths, though 12-inch lengths are also needed occasionally for the larger hand bouquets. For strong stems gauge 20 is heavy enough, and costs in the trade about 3s. 6d. per 12 lbs.; gauge 22 and 24 are suitable for light work; for strengthening flowers as well as binding, 26 to 30 are available. The prices increase with the smallness of the wire, gauge 30 costing about 7s. per 12 lbs. Smaller silver-plated binding-wire is sold on $\frac{1}{4}$-lb. reels, one dozen costing about 5s. Green-covered wire is of service for use where silvered-wire might prove too conspicuous; gauge 30 is somewhat stiff, 36 answering better for binding, the cost for $\frac{1}{4}$-lb. reels being

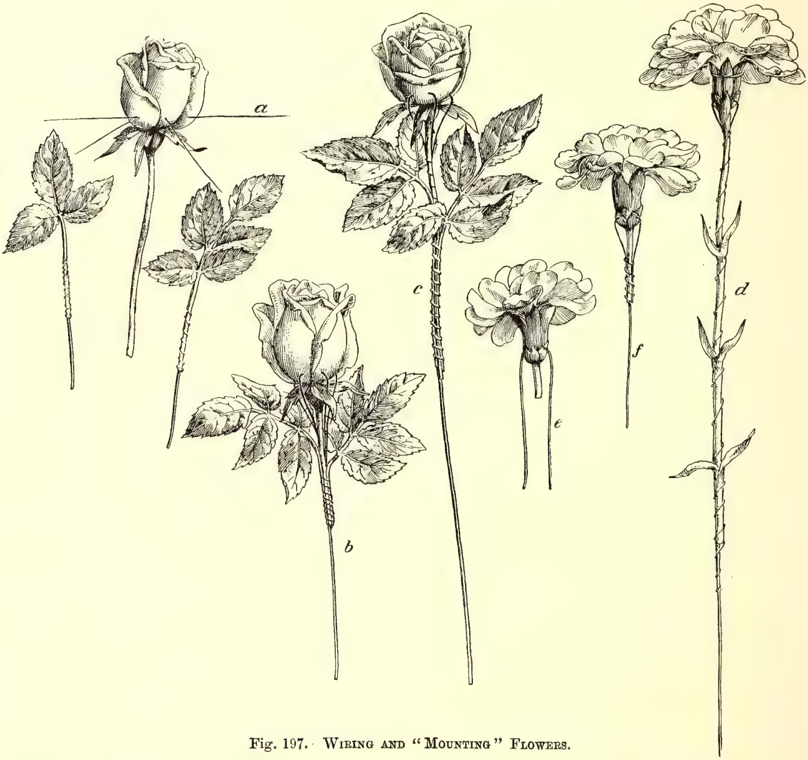

Fig. 197. Wiring and "Mounting" Flowers.

References : a, two wires forced through Rose and brought down as in *b* and *c*, attaching leaves : *d, e* and *f* mounting and wiring carnations. See text.

9s. per dozen. Pliers are required for cutting the thickest wires; though an old pair of grape scissors answers for cutting the binding-wires. Foundations for bouquets, wreaths, crosses, anchors, and other designs, are, in some cases, needed by florists in towns, but can be very easily formed—as will be shown.

"Mounting" the flowers is an indispensable, as well as a rather delicate, operation, but which can soon be mastered. Take roses for instance. The petals of these are very liable to shatter, and the peduncles close up to the embryo seed pod are very brittle. Wiring the flowers and supplying a wire-stem obviates both difficulties. Commence by thrusting two short lengths of the smaller stub wire through the petals, as shown at *a* in Fig. 197, bringing the ends down, as at *a*, *b* and *c*. If this is done properly the wires have the effect of pressing the petals up somewhat tightly together, and keeping them in that desirable position. Small green or bronzed rose leaves ought always to accompany roses or rose-buds. If they are not attached naturally to the stems where they will show to the best advantage, leaves should be added. These loose leaves ought to be provided with a light wire stem, bound to the stalks as shown under *a*, and these in their turn be attached to the rose-stem. If the roses are wanted for wreaths and similar work, a short, stout stem (*b*) should be bound on at the same time as the leaves are attached, while 7-inch or longer lengths of stem wire are required for blooms or buds intended for bouquets, as shown at *c*. Camellias are somewhat similarly treated, even to the extent of supplying leaves, while gardenias may be strengthened by having a wire passed through the tube only, providing leaves, if need be, and stems, as in the case of roses. Chrysanthemums with weak peduncles have to be strengthened by wires, and all have to be given wire-stems, so that they can be fixed in any position desired.

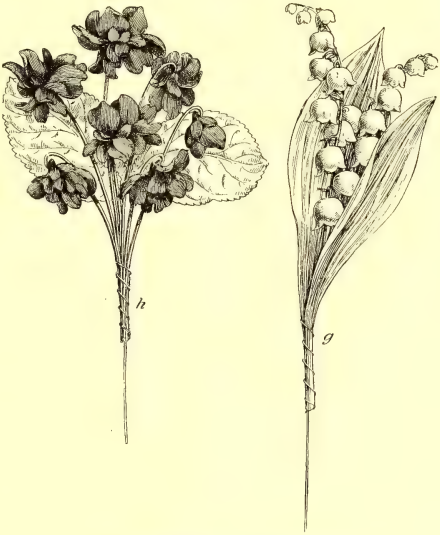

Fig. 198. Wiring Violets and Lilies.

Carnations, if the calyces burst, ought to have a thin raffia or wire-tie immediately under the petals, and all should be strengthened, as shown at *d*, this flower being provided with a long stem for a bouquet. Flowers taken off with a short stem to avoid sacrificing buds may be provided with wire stems, as shown in the diagrams *e* and *f*.

Liliums are easy to wire, and the same may be said of daffodils and narcissi. In each case short flower stems only should be saved, as they are too clumsy for most purposes. Arums, which are principally used in wreaths and crosses, ought to have their stems severely shortened, leaving only enough to show above the moss foundation. They can be fixed upright by means of two strong wires passed through the tube, brought down, and the ends inserted in the moss. Eucharises are easily damaged by wire binding, and the long, thin tubes of the flowers should have a neat bandage of clean, moist cotton-wool wound round them, after which they may safely be bound to either long or short stems. Pancratiums have to stand up above other flowers, and have a swollen base, to which wires can be attached. Lily of the Valley are the most effective when associated with their own pale green leaves, and are not difficult to mount, as shown at *g*, Fig. 198. Violets are liable to droop quickly. To prevent this pass binding wire round the stem from the flower downwards, and when bunched and supported, as at *h* (Fig. 198), with stems as required, they look well in bouquets and wreaths. Single orchid blooms are not difficult to mount, and long spikes may be made to arch gracefully by having stout green binding wire neatly wound round the main stem from the point to the base; a strong wire attached to the lower part of the stems renders them amenable to severe bending. Every frond of fern should have a wire-stem, neatly attached; and long sprays of asparagus sometimes require backing with wire so that they can be bent to an effective angle.

BOUQUETS.

Painfully neat, solid arrangements will no longer be tolerated. Hand bouquets nowadays must be light in appearance and light to carry; this can only be effected by providing wires for the natural stems and tastefulness in arrangement of the flowers. Nor will indiscriminate mixtures find favour. Customers usually order what they require, the colours selected corresponding with the dress to be worn when the bouquet is carried. White goes well with everything, and the majority of bouquets are composed of one colour, such as either pink, yellow, crimson, and mauve, toned down with white. At many weddings the bride has an ordinary large round bouquet composed of all white flowers and greenery, not forgetting orange blossoms standing up conspicuously, and shoots or sprays of myrtle. Bridesmaids in numerous cases are provided with shower bouquets. Ball-room bouquets are mostly of the older style, as being more easy to deal with.

Wire frameworks can be bought, and are sometimes used in the making of both round (Fig. 199) and shower bouquets, the stems of the flowers being drawn through just where they are wanted; but the expert florist dispenses with all such aids. For a round bouquet a light stem is used for binding the flowers to as they are added, a little moss packed among the stems fixing the flowers in the direction required. The novice, however, is advised to bind a firm wad of dry moss, say 3 inches through, to the top of a stick a little stouter than an ordinary lead pencil and about one foot in length. The wire-stems should be passed through the moss, and the ends either twisted round the stick or bound tightly with fine string, and in this way it is possible to arrange the flowers as lightly as desired. A thin foundation of the cheaper kinds of white flowers is frequently formed, and springing out of them more elegant and choicer flowers. Maiden-hair fern fronds form pleasing foundations, but for a short time only, as the fern soon shrivels and exposes the wired-stems. Spikes of Lily of the Valley, Roman hyacinths, orchids, single blooms or buds of roses, carnations, pancratiums, and pips of stephanotis (also fern fronds), are the most effective when standing out clearly from the other flowers. Sometimes long trails of asparagus, with a few light flowers wired to them, are prepared and attached; the bouquets may then be described as a combination of the two styles—round and shower.

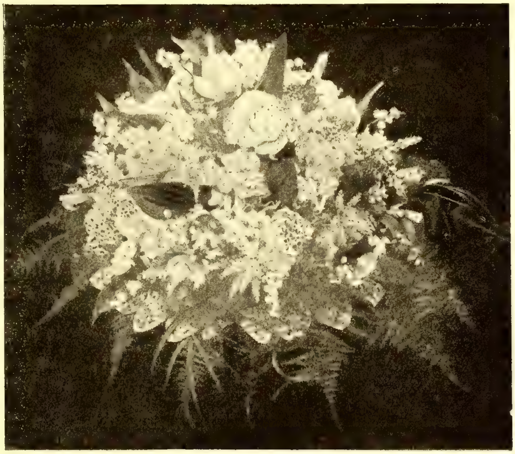

Fig. 199. Round Bouquet.

Shower bouquets are more difficult to make. Not, however, if abundance of long spikes of odontoglossums, oncidiums, phalænopses, and other orchids are available, as it is scarcely possible to make a mistake with these. Some idea of the most popular form can be gained by reference to Fig. 200; but some shower bouquets, notably those exhibited for prizes, are larger and bolder in outline, the material for them costing large sums of money. The beginner is advised not to attempt fastening flowers to asparagus trails. First form a good point, and then proceed upwards, forming a stem with the wires twisted together as the mounted flowers are added. When the lower portion is framed out, the stem may be bound to a stick, surmounted by a small, solid knob of moss, and the upper portion of the bouquet can be thrust through the latter and fixed. The bulk of the flowers should drape downwards, and all ought to be tightly put together, forming a groundwork, and hiding the wires with maidenhair fern. About three long sprays, and several shorter ones, of Asparagus plumosus nanus completes the bouquet.

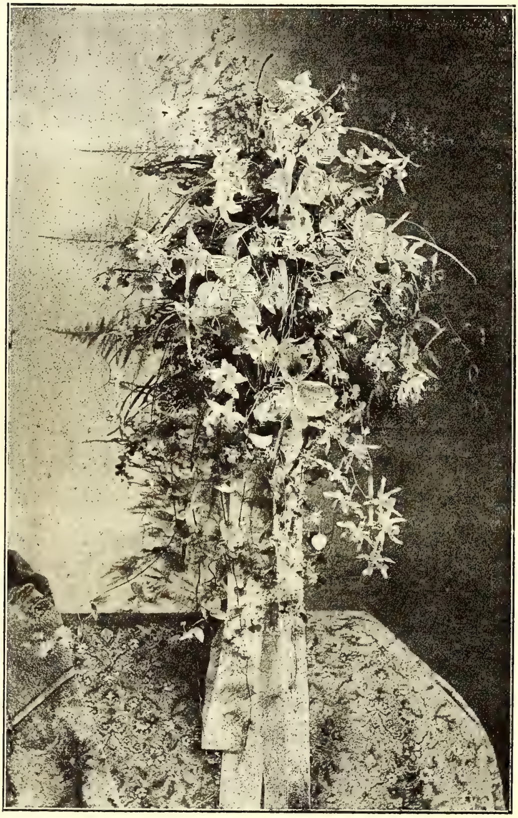
Fig. 200. Shower Bouquet.
(By Mr. Perkins, Coventry.)

If the wire-stems used on either kind of bouquet are too bulky, reduce them to different lengths and bind them tightly to the stem. Bouquet-paper ought not to be very conspicuous, as their primary use should be to strengthen and hide the stems. Shower, as well as ordinary, bouquet-papers can be bought in different sizes, but larger openings have to be made in most of them for the stems to pass through. Bouquet-holders (for the handles) are very cheap, and give a better finish than does a binding of either white or silvered paper. Narrow ribbon is good for tying tightly round the holders to prevent their slipping, and long bows and streamers of broader satin ribbon, white, mauve, or yellow, attached to the upper part of the handle, are preferable to introducing a bow of ribbon among the flowers.

"Posies" of long-stemmed flowers are sometimes carried by bridesmaids and others, these being arranged carelessly, and done up with ribbon only. Long-handled French baskets are sometimes carried by children at weddings, and are also occasionally wanted for presentation purposes. For these all the flowers, fern or asparagus should be wired, and they can be most tastefully and lightly arranged by inserting the wire stems in a firm ball of dry moss in the bottom of the basket. Asparagus or smilax may be wound round the handle and attached to the top, facing outwards, with a bow and trailers of satin ribbon to match the flowers.

Button-hole bouquets, if we except those worn by coachmen at weddings, ought never to be large or clumsy, one, or at the most, two kinds of flowers being used. Rosebuds, carnations, Lily of the Valley, violets, gardenias, tuberoses, stephanotis, and the smaller-flowered orchids are among the more popular kinds for the purpose. Each flower should be "wired" separately, and they can then be arranged and faced without much difficulty. A small frond of maiden-hair fern and perhaps a tiny spray of the more durable Asparagus plumosus at the back of the flowers are needed, all being bound together with fine wire, and the neat stem covered with silvered paper. Three small carnations are frequently partially split and then bound tightly together, when they appear to be a single large bloom. The proper backing for these is a leafy growth or two of carnation, the London florists fastening the points of the leaves down to give them a more graceful appearance.

Ladies' shoulder sprays are made in different forms to meet the wishes of those ordering them. Some are merely a bunch of flowers or a glorified gentleman's button-hole bouquet, while others are long, narrow, and curving. In every case all the flowers are best mounted on light wires, otherwise they cannot be lightly arranged or be made to face outwards properly. Even spikes of odontoglossums have frequently to be thinned out, and some of the flowers mounted and fixed where they show to better advantage. In forming long sprays, no attempt should be made to work to a foundation of asparagus or fern. First put the flowers together, commencing at the point and twisting the wire-stems round each other, thus forming the spray, and then back the flowers with asparagus or fern. Finish off neatly, covering the "handle" with silvered paper.

MEMORIAL EMBLEMS.

Wreaths are most in demand, but crosses, harps, anchors, and broken pedestals are also frequently ordered. Wire foundations for all these are, as previously intimated, to be obtained in various sizes from horticultural sundriesmen. Some of the shapes require to be covered with moss, and others use frameworks designed with a view to dispensing with moss, the flowers, all mounted, having their stems secured by twisting them round the wire foundation. All things considered, home-made, moss-covered foundations are not only the cheaper but the better. Lengths of pliable hazel, privet, or willow may easily be formed into a hoop for wreaths; laths or strips of deal into crosses; strips of deal and stout wire into harps or anchors, and pedestals can also be contrived. All these frameworks should be covered with fresh, clean moss, binding it tightly with fine string. It must be made solid, otherwise the wire stems will not remain in the position

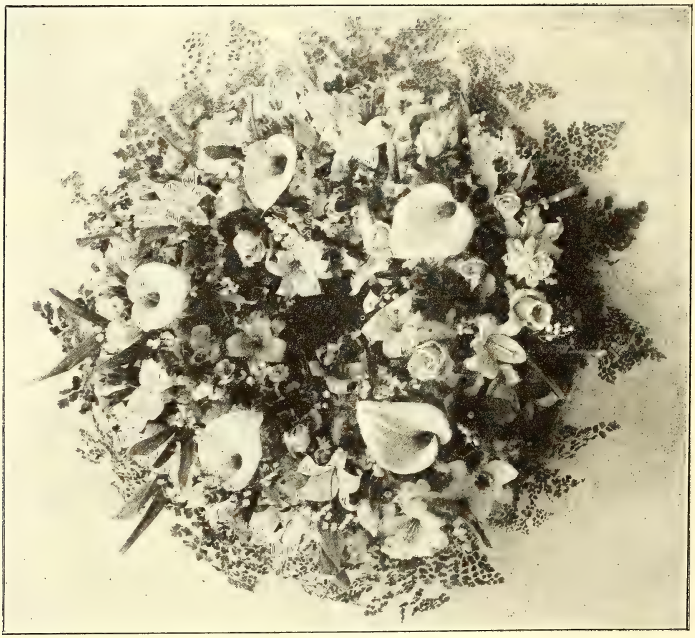

Fig. 201. Wreath of White Flowers.
(By Mr. Iggulden, Frome.)

required. Novices frequently err in making their foundations much too large, and in attaching the moss too loosely. A small wreath, for instance, well made is much to be preferred to a larger one, presenting a "skimpy" appearance owing to not nearly enough flowers having been used.

A mossed wreath foundation that can be sent by post may measure 10 inches to 12 inches across; a wreath costing a guinea or more can be made on a foundation 15 inches in diameter, and quite a large or subscription wreath on an 18-inch foundation. A few bold flowers, mixed or otherwise, such as arums, liliums, pancratiums, camellias, eucharises, also chrysanthemums, or cattleyas, if coloured flowers are permissible, ought first to be inserted in a circle, thinly and uprightly. If one wire-stem is not sufficient to keep these steady, use two or more. Next form a groundwork with some kind of comparatively cheap flowers, and among these distribute roses, gardenias, Lilies of the Valley, tuberoses, stephanotis, cyclamens, single and double violets, Roman hyacinths, narcissi, and other choice flowers which happen to be available, mounted on long stems and made to set out boldly (Fig. 201). A few fronds of maiden-hair fern may be interspersed among the flowers, finishing with a margin of asparagus sprays or berberis (Mahonia aquifolia) leaves. Large, rich, white satin ribbon bows may be attached to wreaths.

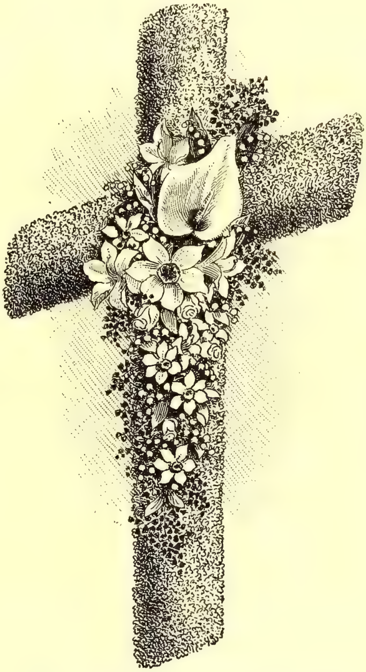

Fig. 202. Mossed Cross with Floral Spray.
(By Miss Iggulden.)

Wreaths, very different in style to the preceding, only requiring a certain amount of taste to form, absorb fewer choice flowers, and may be made as desired. A solid foundation of either white or pink asters and chrysanthemums, purple pansies, or other suitable kinds can be provided, and fixed on this, as if laid on it, to about one-half of the circle, fronds of ferns or sprays of asparagus and choice white flowers. Laurel, and also croton leaves, are, in some instances, substituted for the mass of flowers with good effect; and lichen, which can be bought in bundles, is employed as a groundwork for supporting what might be termed a double spray of choice flowers.

Crosses may be made of any size, and in various forms. For an ordinary, inexpensive cross the foundation may be 18 inches and the cross-bar 11 inches across, disposing this either at right angles with the "beam," or at an angle of about 45°. Cover with moss and arrange the flowers in the form of a spray; or the whole surface may be covered with one kind of flower only, such as Lilies of the Valley. Chaste examples are represented in Figs. 202 and 203. Harps, anchors, and other designs are occasionally ordered, but when once a florist has gained a good insight into the art of floral manipulation, nothing ought to come amiss to him.

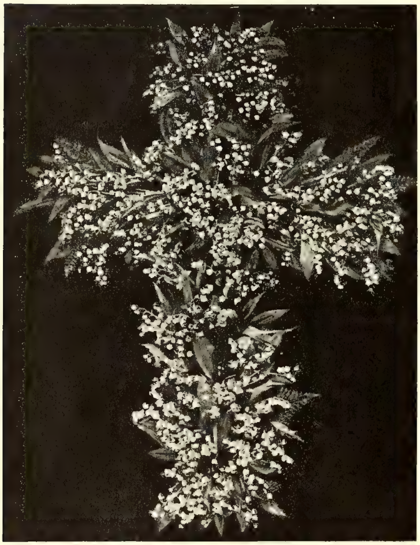

Fig. 203. Cross of Lilies.

Packing Flowers.

For flowers to travel well and fetch the best prices, they must be packed properly. That is to say, closely, firmly, and in such a manner as to prevent them from shifting about and becoming bruised. If the bulk is to be consigned to commission agents, from these any number of suitable boxes for packing in can be obtained; but if they are to be sent direct to florists in towns generally, then the grower has to provide his or her own boxes. They are not dear, and can be bought from regular box-makers much cheaper than they can be made locally. Hinged boxes soon get out of order, and drop lids are apt to fall into the flowers; so that, all things considered, those with rimmed lids, lightly made and furnished with corner plates, are the best. If bought in different sizes they can be "nested" and packed into close quarters either when travelling empty or when stored. The largest size may measure 26 inches long, 15 inches wide, and 7 inches deep; the next 24 by 14½ by 5½ inches, reducing them till the smallest size used by market growers is reached, these having hinged or wired lids, and measuring 17 by 13 by 3 inches. A very useful size measures 18 by 12 by 4 inches. They are bought by the gross or fractions of the same, the smaller size costing nearly 1½d. each and the largest about 7d. each.

The bulk of the flowers marketed are bunched in the manner already shown. Line the boxes with soft packing-paper, not necessarily tissue-paper, leaving about one-half of the sheets employed, hanging over the sides. Pack the several bunches closely, with the flowers facing upwards, and if there is room for a second layer, place a sheet of paper between them. Finish by turning in the ends of the packing-paper, on which shut down the lids tightly. In frosty weather use more paper inside the boxes, and also enclose the boxes in paper. There should be no nailing down of lids, but they ought to be strongly tied. Arums are not bunched, but should be laid in neatly and closely; the spathes at each end points upwards, Fig. 204. They ought to be kept in position by having strips of wood, cane or bamboo pressed down on the stalks, also pressing firmly against the box sides. Other long-stemmed flowers, including cattleyas, liliums, and gladioli, are sometimes similarly packed. Eucharises, gardenias, and camellias are mostly conveyed in the small boxes, duly lined with cotton wool. They should be packed closely, facing upwards, have the tissue-paper lapped over them, and cotton wool laid on the top of this. White roses ought to be very carefully packed, as they bruise readily.

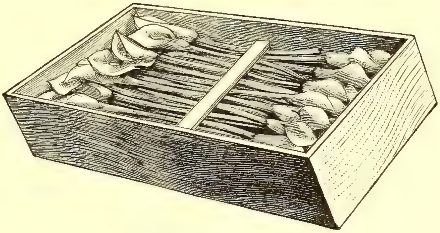
Fig. 204. Packing Arums.

Postal boxes ought also to be strong enough to bear pressure all round, light deal boxes being more trustworthy than those made of cardboard. Flowers sent in them should be packed closely and firmly, covering with paper, and over this, if need be, cotton wool. String them up securely, and if a loose label is tied on, write the address on the box also. Light deal boxes, with corner plates, are the best for wreaths, and the like, but thin wood, paper-covered boxes, with cardboard lids, are more frequently used, many not being sent back. The largest size that can be sent by post measures 18 inches by 18 inches, but a good, if not large, wreath can be sent in a box 16 inches each way. Crosses can be packed in wreath boxes, or in regular cross boxes. All should be fastened in position by strings, passed through and tied under the bottoms of the boxes, which may then be even turned upside down without the contents being damaged.

Distribution and Markets.

Covent Garden is the first Market thought of by all who commence growing for sale but they soon find out that this market is already too well supplied. Occasionally good prices are there obtained for superior produce, but more frequently than not the returns are disappointing. It may cost more to send to the principal Midland and Northern towns, including Birmingham, Liverpool, Manchester, Newcastle, Sheffield, Hull, and Glasgow, but the returns in the end are often better. In many districts there is a good local demand for flowers, and if remunerative prices are obtained, it is better to be satisfied than sending farther on speculation. When there are extra large quantities of flowers that must be either cut or spoilt, acquaintance may advisedly be made with commission agents in large towns, as by no other means can the supplies be got rid of. Better low prices than no sale. In the course of a few years, growers who send out superior flowers usually receive as many applications for them as they want. Experience counts for much in these matters, and it is at least as easy for the novice to lose as to gain much money in flower culture. For a person to succeed he must watch the markets closely, and studiously endeavour to meet the public demand. He must know how to grow, what to grow, and when to provide, amidst a world of competition, for a fickle and exacting master, and never forget that only the best of everything, temptingly displayed, is competed for by purchasers; or in the words of one of many who have mastered the position—"Success is all a question of smartness, judgment and skill."

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THE FLOWER GROWER'S GUIDE.

VOL. I.

THE

FLOWER GROWER'S GUIDE

BY

JOHN WRIGHT, F.R.H.S.

EDITOR OF THE "JOURNAL OF HORTICULTURE," "GREENHOUSE AND WINDOW PLANTS"
AND "THE FRUIT GROWER'S GUIDE"
AUTHOR OF "PRIMER ON HORTICULTURE," "GARDEN FLOWERS AND PLANTS"
AND "MUSHROOMS FOR THE MILLION"
MEMBER OF COMMITTEE OF THE ROYAL HORTICULTURAL SOCIETY
GOLD MEDAL ESSAYIST OF THE WORSHIPFUL COMPANY OF FRUITERERS
CHIEF INSTRUCTOR ON HORTICULTURE FOR THE SURREY COUNTY COUNCIL
ETC., ETC.

With Coloured Illustrations

BY MISS GERTRUDE HAMILTON AND MISS MARIE LOW

AND

NUMEROUS ILLUSTRATIVE DIAGRAMS BY F. W. BURBIDGE, F.L.S., GEORGE SHAYLER, F.R.H.S.
AND MISS MAY IGGULDEN

IN THREE VOLUMES
VOL. I.

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This Work is Dedicated

(BY PERMISSION)

TO THE

PRESIDENT AND COUNCIL

OF THE

ROYAL HORTICULTURAL SOCIETY

IN RECOGNITION OF THE COMMANDING SERVICES OF THE SOCIETY IN THE
ADVANCEMENT OF FLORICULTURE AND OTHER BRANCHES OF
GARDENING IN THIS COUNTRY FOR ALMOST 100 YEARS

PREFACE.

A main factor in the world of plants is constant change.—BURBIDGE.

* * * * * * * *

There is no monotony in flowers; they are ever unfolding new charms, developing new forms and revealing new features of interest and beauty to those who love them.—INTRODUCTION (page 2).

MORE and more persons are added to the long roll of flower lovers every year, the increase being in much greater ratio than the natural growth of our population; and at no former period were so many persons engaged as floral amateurs in making their home surroundings attractive and enjoyable.

Endeavour is made in the following pages to aid all, by whom such aid may be required, to engage successfully in the delightful pursuit to which they are attached.

The scientific principles underlying the production and cultivation of plants are portrayed in a masterly manner by Mr. F. W. Burbidge, F.L.S., who graphically delineates their wonderful structure and the beautiful adaptability of their various parts to each other in the economy of plant life.

In such practical work as the formation and planting of gardens, Mr. W. Iggulden has contributed freely from the stores of his long experience; and with the aid of the pencils of his daughter, Miss May Iggulden, and of Mr. George Shayler, has made clear the necessary details which must be carried out if success is to be achieved in flower gardening in its various aspects.

Mr. S. Arnott, J.P., a recognised authority on the subject, has treated with an ability which will be readily admitted, the increasingly popular subject of Hardy border plants, to be followed in Vol. II. by practical treatises on hardy Florists' Flowers.

The Rev. F. D. Horner has contributed a valuable chapter on the flower that no one has done so much to improve as himself—the Show Auricula, which in its most correct form is a floral jewel of the first water; and Mr. A. Piper has dealt with the Queen of Flowers which he understands so well—the Rose.

To those and other skilled cultivators a tribute of appreciation is due for their valued co-operation; and, not least, to the Rev. W. Wilks, the distinguished Secretary of the Royal Horticultural Society, for joining, so cordially and helpfully, in striving to make clear to the uninitiated the significance of certain familiar botanical terms, leading to the evolution of "Florists' Flowers."

Flowers for representation in colours have been obligingly supplied as follows:—Violets by Mr. Beachey, Kingskerswell, and Mr. C. Turner, Slough; Anemones and Violets by Mr. W. Allan, Gunton Park; Daffodils, Hellebores and Irises by Messrs. Barr & Sons, Long Ditton; Rockwork flowers by Mr. J. T. Bennett Poë; Clematis by Messrs. R. Smith & Sons, Worcester; Flowering Shrubs and Blue Primroses by Messrs. Veitch & Sons, Ld., Chelsea; Roses by Messrs. William Paul & Son, Waltham Cross; Polyanthuses by Sir Trevor Lawrence, Bart.; Pansies and Violas by Mr. W. Sydenham, Tamworth; Pyrethrums by Messrs. Kelway & Son, Langport; Auriculas by the Rev. F. D. Horner; Cannas by Messrs. Paul & Son, Cheshunt, and Messrs. H. Cannell & Sons, Swanley; Carnations and Picotees by Mr. James Douglas, Bookham.

Works that have been consulted in the preparation of this volume, apart from those mentioned on page 34, are—Robinson's "English Flower Garden" and "Alpine Plants," Nicholson's "Dictionary of Gardening"; the *Index Kewensis*, the *Journal* of the Royal Horticultural Society, and the *Journal of Horticulture.* Obligations are tendered to all sources from which information has been obtained with the object of making the FLOWER GROWER'S GUIDE trustworthy and serviceable to all who may need such information as may be found in its pages.

J. WRIGHT.

LONDON.

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THE FLOWER GROWER'S GUIDE.

VOL. II

THE

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BY

JOHN WRIGHT, F.R.H.S.

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AND "THE FRUIT GROWER'S GUIDE"
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AND "MUSHROOMS FOR THE MILLION"
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AND

NUMEROUS ILLUSTRATIVE DIAGRAMS BY F. W. BURBIDGE, F.L.S., GEORGE SHAYLER, F.R.H.S.
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